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THE DIAGNOSIS AND TREATMENT OF INJURIES OF THE HEAD.*

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Injuries of the head are frequent, exceedingly variable in character, notably uncertain of prognosis, and often disastrous in their immediate or remote results. There is considerable difficulty in classifying serious lesions of this region to the greatest practical advantage. The usual tendency to place special emphasis upon the presence or absence of fracture of the bones is misleading clinically, because, for the most part, fracture when recognizable is of entirely secondary importance to injury of the cranial contents, because fracture is not always recognizable or treatable, and because in any event the treatment of skull fractures has little in common with that of other bones.

It is exceedingly helpful to study head injuries from a distinctly clinical standpoint somewhat after the manner in vogue in the presence of injuries to the other great cavities, the adbomen and thorax. In the one case as in the others, the chief rôle of treatment lies in the prevention of infection and the control of hemorrhage, together with the removal of the sources of present or future cortical irritation. That diagnosis which is sufficient to point the way to the most efficient treatment is alone of paramount importance; the exact recognition of conditions about which nothing material may be done is more or less vain, particularly if it divert the attention from a single detail of practical succor. Hence, that practical diagnosis which promptly recognizes the indications for action, or appreciates the negative signs which counsel masterly inactivity, is the most utile.

It is my present purpose to call attention to some perhaps well known, but sometimes forgotten, precepts, and to elicit discussion upon some still unsettled problems in the technique of opening and closing the skull.

The first duty in all head injuries is a careful and systematic examination. For this purpose it is always desirable, and usually necessary, to clip or shave the whole head. If there has been extensive wound of the soft parts, ever so slight a penetrating wound or fracture of the skull, shaving the whole head should be insisted on as the first necessity. The most astounding blunders in diagnosis as well as barbarous transgressions of the laws of asepsis are still occasionally observed. I have known a boy to be carted about and x-rayed in two or three planes, at great trouble, expense and risk, when a few moments subsequent use of the razor showed the small bullet to have emerged three-fourths of an inch from the wound of entrance.

All points of contusion, ecchymosis or hematoma, should be carefully noted and examined. Two conditions need special consideration: 1. The natural irregularities of the skull. Such depressions may be mistaken for depressed fractures, or, much more frequently, in damage cases are claimed as such later on. If the head has been shaven and carefully examined at the time of accident such claims may often be much more easily refuted. 2. The embossments and tumefactions caused by extracranial effusions of blood may lead to errors of diagnosis unless carefully studied. Such effusions may be located superficially in the cellulo-fatty tissue, i. e., subsutaneously, or deeply. The subcutaneous boss is sharply circumscribed. If small in quantity and intimately infiltrated into the cellulo-fatty tissue it is remarkably hard, but if the quantity be large so as to dissect up the tissues, it is soft and fluctuating. But this fluctuation is superficial and readily distinguished from that of a subaponeurotic effusion. The bosses produced by subaponeurotic and subperiosteal effusions are more diffuse, their hardness more abrupt and fluctuation, if present, deep. Usually these effusions give rise to little trouble in diagnosis, but under certain conditions they may quite remarkably simulate fracture with depression. First in the early history of the case, when there is at once infiltration into the subcutaneous tissues and also a deep effusion, one finds the boss from the start hard on the periphery and soft in the center, giving the appearance of a distinctly depressed area of bone. I have known this condition in two instances to mislead the examiner into a diagnosis of depressed fracture; continued pressure on the hard rim, however, enables the finger to recognize the subjacent bone in its normal plane with that of the apparently depressed region. Second, at a later period a deep-seated embossment may undergo central softening while the periphery remains hard.

A careful study of the discharges of blood and serum from the ear or nose, the behavior of ecchymosis of the mastoid region, of the conjunctivæ, of the pharynx, etc., and the disturbance of function of cranial nerves, is important. In case of external wound or probable fracture at the base communicating with the exterior, the greatest possible antiseptic precautions should be at once instituted. It is well as a routine practice to cleanse the various cavities, exposing the brain to infection when fracture communicating with them is thought possible. The nose should be douched with boric acid solution, and nostrils lightly plugged with sterile cotton. The mouth and pharynx need to be kept cleansed by mild antiseptic washes. While all this may sound stale, we are frequently reminded at the bedside that the average practitioner is still far from alive to the necessity of prompt and constant attention to these de-

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tails in head injuries. Men who exhibit considerable respect for the abdomen, aseptically speaking, forget the needs of the cranial cavity, especially if there be no glaring cranial wound.

If there be scalp wound, compound fracture, or any indication for operation, the scalp must be cleansed in the most thorough manner possible. It should be thoroughly scrubbed with hot water and soap; then with 1 to 20 chlorinated soda, rinsed off with sterile water; rescrubbed with 1 to 1000 bichlorid and covered with a mild, moist bichlorid gauze dressing; wounds of the soft part are explored, perhaps enlarged, carefully irrigated and cleansed, and if lacerated and contused, trimmed with scissors in a surgical manner.

If there is no indication for immediate operative interference, the patient should be placed under the care of a good nurse, who may watch and record the pulse, temperature, respiration and movements of the patient. He should be placed in a warm bed with the head low. During the early stages of concussion, warmth to the feet, counter-irritation to the epigastrium and cardia are useful. If the pulse becomes bad, strychnia or atropin may be administered. In the stage of excitement which usually follows the period of depression, great restlessness, headache, etc., the bromids, or even a little morphin, is useful. However, in this class of injuries the first and greatest duty is rigid asepsis. The second is the securing of a careful consecutive history of the progress of the case from the time of the injury, and this should be reduced to writing as it transpires and not left to guess-work and memory. And third, the observation of certain general precepts, among which may be stated: The recumbent position, with absence of noise and excitement, should be kept until the symptoms have well resolved. All cases of serious head injury should be carefully observed for at least a month. The prognosis should be guarded, and in cases liable to litigation, it should be guarded both ways. Persons looking for damages are liable to store up all the symptoms and loose talk of the doctors and make the most of it. It is as unwise to discuss all the possible calamities that might follow a blow on the head, as to assure such a patient when he wakes out of the concussion that he is all right. The better course for all concerned is to observe keenly until the case is cleared up; state only the evident facts and prophesy not.

Having made such a local examination and thrown out the necessary lines of defense, so to speak, he is in a position to with safety assume the offensive in case of necessity. While he may still often be far from clear as to the extent, seriousness and outcome of the case, so far as his activity is concerned, he finds it already falls, or in its further development will fall, into one of the following four classes, or one of their subclasses:

Injuries Without Important Local Signs or Definite Focal Symptoms.—The following instance may be taken as somewhat typical in a general way of this class, though perhaps unusually severe:

P. W. D., a switchman, aged 38, was coupling cars, Dec. 3, 1898, when the draw-pin broke and a piece of it struck him with great force on the top of his head. He fell unconscious and was removed at once to the hospital, reaching there at 10 a.m. in a semicomatose condition, his pulse 72, rectal temperature 98 degrees. On my arrival at 12:30 he was taken to the operating-room; the head completely shaved and cleansed; the ears cleansed and examined, no discharge or injury found, but insufflated with boric acid and plugged with cotton. There was a contusion 1½ inches long and about one-half that breadth at the vertex, in the medial line, the most careful examination revealing no evidences of fracture. The abrasion was dressed with boric acid powder, the head bandaged and the patient returned to bed. He vomited twice during the day. There was retention of urine requiring the use of the catheter for fourteen days, or till December 17. From the time I saw him, at 12 m. December 3, till December 14, or eleven days, he remained in a semicomatose condition most of the time, i. e., he slept or snored most of the time when left alone, but at times was restless and flopped about and had to be strapped in the bed. When attempts were made to catheterize him he became very violent, insomuch that it took several persons to hold him, and once my assistant had to give chloroform to draw the urine. During these eleven days he spoke twice—on the second and ninth day he asked for a drink.

His temperature, a trifle subnormal at first, after the second day rose slightly above normal occasionally, but fluctuated between 97.5 and 100 F. The pulse on the third day reached the lowest point, of 42; during the next four days it varied between 42 and 60. During the second week the pulse was still more variable, some days varying from 58 to 85. On the fourth day he would sit up and take milk when told to do so, and he occasionally seemed to vaguely understand some things that were said to him, but he did not regain consciousness to know where he was or what was wrong until December 17, two weeks after the injury. December 10, at 9:30, he had a convulsion which was general and lasted but about two minutes; also a similar one December 12. Several uranalyses showed nothing of special interest, unless some increased indican reaction. From December 15 to 22, his condition gradually cleared up and he was taken home on the latter date. He was up and about the house, complaining of some headache, weakness and dizziness, gradually improving until January 14, when he came to the office, and resumed work a week later, or seven weeks after the accident.

I will not at this time discuss the condition further than to say that, at the first examination, my diagnosis might be said to have been the negative one: Severe head injury, no external wound, no focal cerebral symptoms, no indication for operation. During the further watching through two weeks with rational attention to symptoms, nothing occurred to remove the case from this category until spontaneous recovery.

If time permitted, many cases might be related as starting out in this class, but which, after a few hours or a few days, variously deviated in the most diverse courses. Of course the development of localized cerebral symptoms removes the case to another class and indicates our surgical duty, but until such indications arise the treatment must be non-operative, let the outcome be what it may. To open the head under such conditions is to go hit-or-miss, quite as likely to do harm as to do good, and is on a par with the generalship which would lead an army blindly into an unknown country and against an enemy of which nothing was known save that one of some kind existed somewhere. In the one case, as in the other, chance may now and then approve the result, but the rule must be disaster, and the practice is not scientific.

There is Fracture of the Vault without Wound.—These cases may be considered under the following subdivisions:

1. There are local signs—i. e., of fracture—but no focal cerebral symptoms. The same methodical examination of the head indicates fracture. Sometimes a fis-

sure may be detected by the finger, or a point may be felt which yields under the finger pressure, or local tenderness and the reaction of defense may convince the surgeon that fracture is present. Yet, however clear the evidence of fracture, excepting only a considerable depression over the motor areas, there is no indication for immediate operation. Wait and watch developments just as in the previous instance; if, as the concussion dissipates, giving place to a sort of hebetude with ability to move the limbs at command, the facial expression regular, speech slow but correct, in short, no localized phenomena, the treatment becomes identical with that outlined above.

If, however, the examination has disclosed a depression, there is longer but little difference of opinion as to the proper course. It may well be doubted whether a moderate depression of a considerable area of skull is of itself a serious matter. Indeed, the depression of a small area is more often accompanied with sources of irritating mischief than the slight flattening of a considerable area. But in either event it is the possibility of displacements of fragments of the internal table, injuries to brain and membranes, and probable blood-clots that render the advice to always trephine in the presence of decided depression wise. Under careful and judicious operating, with proper facilities for rigid asepsis, even suspected depression had best be cleared up by exploratory incision and actual depression always relieved by trephining. Under less perfect conditions for operating, some slighter depressions unaccompanied by external wound or localized cerebral symptoms are not of such imperative importance as to justify hasty resort to opening the skull. The condition can wait; a secondary operation under perfect conditions is preferable to the slightest risk of infection.

2. There are local signs of simple fracture with focal cerebral symptoms. These are the cases of real urgency. The necessity for operative interference is clear and unmistakable. It only remains to interpret the symptoms and decide upon the operative technique. There are four sets of cases falling under this subclass:

a. The focal symptoms are on the side opposite the cranial lesion. There is aphasia, or hemiplegia, or a monoplegia of the upper or lower extremity. To trephine at the site of injury including the motor area indicated by the focal symptoms, is the clear and sole indication.

b. The focal symptoms are on the *same* side as the cranial lesion. Here the indications are not quite as clear in detail. Lejars advises first trephining at the site of injury, which may, he says, discover conditions dispensing with further intervention; if not, he then advises trephining in the zone indicated by the focal symptoms. In the cases of this class falling under my observation I have trephined at once on the side opposite the injury, found and removed the clot and ligated the vessel, and relieved the patient without exploring at the point of injury at all. If there were manifest cause to open at the point of injury, it may be granted that it were well to do that first, but it should be remembered that in this class of injury the mischief is apt to be chiefly on the opposite side of the skull, with perhaps none, or but slight, fissure at the point of receipt of the injury. If the force is such as to crush in the skull at the point of injury, *contre-coup* symptoms are not often observed. The experiments of Felizet show the rationale of these so-called *contre-coup* injuries, and why, though the skull is sometimes fractured on the opposite side, much more frequently lesions of the cranial contents take place there. On account of the elasticity of the skull as a whole, compression of one side by a blow causes a corresponding falling of the opposite pole. Being less elastic and more friable than bone, the brain and membranes are more liable to laceration. It would seem the most rational course in these cases to trephine at the point indicated by the focal symptoms, and open at the site of injury only in case of clear indications for so doing.

c. There is crossed paralysis, facial paralysis on the same side, and mono- or hemiplegia on the side opposite to the site of injury. The indication remains to trephine over the motor area implicated, though the prognosis is bad, as the facial paralysis indicates an extension of the fissure to the base, involving the temporal bone.

d. The symptoms are associated in a complex fashion, and without connection with any determinable cranial lesion. There is probably extensive brain contusion, and the prognosis is always obscure. There is no rational basis for operative interference, and the treatment must be along the general lines indicated in the first category.

3. With, or more frequently without, local signs of fracture, there arise localized cerebral symptoms of compression indicating, most frequently, rupture of the middle meningeal.

In these injuries often the patient has not been rendered entirely unconscious or has remained so but a few moments. He may have been able to get up and walk about some. In any event, after the initial stupor has passed off, there is seen to be no paralysis. If now, after such a free interval, whether of some minutes' or some hours' duration, a slowly progressive hemiplegia develops, renewed loss of consciousness, depressed or stertorous respiration, perhaps dilatation of the pupil of the injured side, the indication is clear to at once open the skull at the proper point, evacuate the compressing clots and seek to control the hemorrhage. At the operation one of three conditions may confront us: *a.* By far most commonly an extradural hemorrhage from the middle meningeal, and generally from the anterior branch. This is the most satisfactory condition, because if promptly recognized and the artery tied or controlled, the brain is ordinarily not injured, and the prognosis good. *b.* If on opening the skull at the point of election, no extradural clot is found, but the dura is tense and bulging into the wound, perhaps showing a dark bluish color, on opening the dura a subdural clot is found, the clot should be removed with more care and with less attempt to follow up the thin diffuse margins, which may injure the brain or excite grave cortical hemorrhage. *c.* It may be, after the dura is opened, that but a thin layer of blood covers a bulging dark cortex, indicating an intracerebral hematoma, in which case the cortex must be incised, the clots evacuated; if bleeding continues, tamponade of the cavity. The prognosis in the latter, particularly the last, variety of intracranial hemorrhage is most grave, and the treatment far less satisfactory than in the extradural variety.

There are Signs of Fracture of the Base, but no localized Cerebral Symptoms.—Ecchymoses appearing without other cause beneath the conjunctivæ and eyelids, the mucosa of the pharynx, or in the mastoid region, are often quite pathognomonic of fracture through the respective fossæ. Hemorrhage from the ear, nose or pharynx may be cautiously taken as evidence of fracture, when an extracranial source of the bleeding is fairly excluded, and the less frequent escape of cerebrospinal fluid, when demonstrated, is conclusive. The

paralysis of cranial nerves is also frequently sufficiently characteristic in its course to justify alone or in connection with other symptoms, the diagnosis of fracture.

Slight fractures of the base of the skull probably often occur without any diagnostic symptoms. I find many physicians look upon fracture of the base as almost necessarily fatal, and point to eventual recovery as proof that the diagnosis of fracture was erroneous. Even Gross[1] says: "Fracture of the base, if at all severe, is seldom followed by recovery. I myself, out of at least a dozen instances of this kind, witnessed only one in which the patient was saved."

I can recall at least half a dozen instances in which the evidences of fracture were clear, and yet the patients evidently recovered. In one case in particular, a large array of surgeons and specialists agreed with me and reported to the railway company that the patient would die, yet he finally recovered. There is no reason why fissure running into or across the base of the skull should necessarily be fatal, and under proper care and treatment many such cases do recover. Deroubaix[2] says: "The prognosis in fracture of the base is much more favorable than formerly taught; some surgeons of the present day even assert that there are more recoveries than deaths."

Next to severe concussion and brain laceration, the chief causes of death are hemorrhage and infection. Operative interference has never in my experience been of avail in these cases, i. e., in the absence of focal brain symptoms, though the condition would seem to indicate intracranial pressure probably from hemorrhage. In a man who remained unconscious at the end of ten days, I trephined low down in the temporal region and removed some clots from the middle fossa. He regained consciousness somewhat for several days, but finally died and the autopsy showed deep inaccessible brain abscess from infection through the ethmoid.

In short, for the most part, the preventable deaths from these injuries are due to infection. If the concussion and brain contusion has not been sufficient to destroy life, these patients would survive if infection, usually through the nose and ear, could be prevented. Unfortunately our best endeavors are, in the nature of the case, very imperfect, since anything like a sterilization of the nasal, pharyngeal and aural cavities is entirely impracticable. None the less, a careful initial cleansing and continued care of the ear, nose and throat in all fractures of the base is perhaps not yet sufficiently practiced.

Occasionally a brain abscess develops later and may be located by inference or by symptoms, and opened with some prospects of success. It is sometimes several months after the injury before the symptoms of abscess arise. The three instances falling under my observation did not succeed because there were other foci, discovered only at the autopsy, which could not be located or reached. In other words, infection in fractures of the base is for the most part too acute and diffuse or too deep-seated to be relieved by operation, and even the rarer chronic and localized suppurations arising from this cause are apt to present either difficulty in localization or multiple foci so that after the surgeon has been fortunate enough to open and drain a pus cavity, he finds at the autopsy that one or more others have escaped him.

Fracture of the Vault with Wound.—This condition always calls for more or less operative interference. In all cases the whole head should be rendered as aseptic as possible, the wound cleansed and enlarged sufficiently to well explore the seat of fracture. These injuries are so various that only general principles can be enunciated, but it may be asserted that it is well to open the skull sufficiently to remove all fragments, clots and foreign bodies and to elevate depressed areas.

In this class of injuries the head has already been more or less opened for us, and it often remains only to carefully pick out the crushed pieces with forceps and elevator and smooth up rough edges and spicula with rongeur or chisel. If the breach in the cranial vault is less complete, a small trephine hole partly placed on the sound border gives us *entré* to the depressed area. In opening these already crushed crania, the elevator, chisel, small trephine and rongeur forceps are quite sufficient. There appears to be no practical way yet devised to avoid the loss of the protective bony wall in these cases, at least primarily. Whatever may be said of autoplasty or heteroplasty, it will, I think, be conceded that such operations are not often practicable in traumatic cases unless as secondary procedures. The conditions are not favorable to the perfect healing in of a foreign body, and the patient suffering from a recent skull fracture extensive enough to call for remedy of the defect is in no condition for a prolonged autoplastic procedure. Furthermore, experimental studies and practical results leave it very open to doubt whether any of these methods fulfil their real practical object, viz., avoidance of cortical irritation, any better on the whole than simple aseptic healing without irritation.

Our technique in intracranial surgery is still extremely defective in two regards: 1, in not yet having perfected an easy, rapid and safe method of opening the skull; 2, in our inability to prevent a more or less welding of all the tissues, brain, membranes and scalp into one scar, which often proves a source of cortical irritation.

While large bony defects of the cranial vault are not without their very manifest inconveniences, it may be doubted whether the loss of bone is per se the cause of irritating symptoms. It is quite clearly the cohesion of the cortex and superficial parts that is most objectionable. Some years ago Park advised the use of gold leaf between the injured cortex and the dura. I believe he has since found it impracticable. In two very favorable non-traumatic cases I employed it. Although both ran a perfectly aseptic course, there soon—three and four weeks—appeared a fluctuating, painful swelling which had to be opened, evacuating a quantity of serum, and this continued to reopen until the gold foil was wholly removed; I therefore ceased further trial of it. Minter[3] reports similar results. Some one proposed the use of egg membrane as an absorbable material for this purpose, and I also made use of it twice in trephining for traumatic epilepsy, with precisely similar results. The wounds healed perfectly, but at the end of two weeks a painful swelling appeared, and the egg membrane had to be removed. In one case the wound was re-opened, the serum evacuated and, as I supposed, the egg membrane all removed, the wound reclosed and the patient was sent home much improved, but as is usual in such cases, *not* entirely cured of his epilepsy. A swelling reappeared under the scalp, and the family doctor some weeks later opened it and another considerable piece of egg membrane came out, after which the wound permanently closed.

McKosh[4] reports a case which he trephined for epilepsy in which in the center of a mass of dense connective tissue he found some blackish particles, which proved on examination to be fragments of rubber—the remains of rubber tissue put in at a previous operation

to prevent adhesion of the cortex. The scar tissue surrounding it, which was removed, represented a tumor the size of a walnut.

From my own brief experience and such reports as have come to my notice I am convinced that the insertion of foreign substances between the dura and cortex is wholly objectionable. That far from preventing adhesions it usually increases them by the irritation which it excites, even under the most favorable conditions.

One object of removing blood clots is to prevent cyst formation, and foreign substances would appear more objectionable than blood, and I think experience has proven them to be so. So far as adhesions of the cortex and dura are concerned we may safely rely, for the best possible results, on securing the most rapid aseptic healing, after the greatest possible conserving of the dura, and, as far as possible, stitching it carefully together with fine catgut. In closing the head, as in closing the abdomen, the best results follow the most accurate approximation of the different tissues, layer by layer. But where, as in the present case, the bone is necessarily fragmented and wholly removed from its vascular connections the defect may as well be left, at least for the present, but approximating the other structures as accurately as possible and securing healing with the least excitation of connective tissue. When the defect is small and the periosteum preserved, especially in children, bony repair takes place.

Some have laid stress on replacing trephine buttons, or even advised covering the defect with a mosaic of the fragments removed, and it is true that they sometimes appear to succeed. However, there are two objections to the practice: 1. Especially in traumatic cases these pieces often undergo necrosis and have to be removed, and when they thus delay union they excite connective tissue proliferation and, in addition to failing in their object, leave a less favorable cicatrix. 2. The histologic observations, after bone implantation, by Barth[5] and others show that pieces of bone which have been separated entirely from their anatomical surroundings, when returned to their former place, or placed in another defect in the human skeleton, indeed may grow, yet in all cases undergo necrosis.

The trephine button, about the fifth day, is found adherent to the dura by a deposit of fibrin, while the chinks and spaces about it are filled with fibrin. The nuclei of the transplanted bone cells appear as empty spaces or are seen to undergo degeneration. Now an active proliferation of connective tissue begins over the periosteum and dura mater; young granulation tissue grows into the spaces of the dead bone button, absorbs the fibrin coagulum, incloses in its meshes and vascularizes the dead bone as a porous foreign body. Almost immediately—sometimes after the seventh day—a deposit of new bone over the dura mater begins, which is deposited in lamellæ through the dead bone. It is this constant deposit of new bone through the dead button that is peculiar to the first few weeks. This goes on steadily from week to week as the dead bone becomes replaced by the living: it goes on without any anatomic appearance of the old bone being absorbed: it much resembles cartilaginous bone formations as observed in fetal long bones. According to B., this process is found in all cases where the button is not cast off as a sequestrum: it heals thus only when it fits well into the defect: the whole process takes perhaps two months, under favorable circumstances: he replaced buttons after maceration in potash and staining with boiling carmin: they healed in the same manner as fresh implanted pieces.

Von Eislesberg, Fraenkel and others appear to hold the same views. The latter claims that all organic material becomes adherent to the dura and that only inorganic material, into which granulations from the dura can not enter, prevent adhesion. From the time of Paré attempts have occasionally been made to implant metallic plates into skull defects, and gold, silver, platinum, aluminum and many other substances have been tried. Of late years interest in the matter has revived and the practice apparently increased. The general opinion appears to be that celluloid is the best material. Among the good qualities of the material are cheapness, lightness, ease of shaping with scissors and its being a relatively poor conductor of heat. Dr. Curtiss suggests that aluminum plates might be absorbed in the course of years under the alkalinity of the blood serum. It is not, however, my intention to go deeply into this question, since I believe the use of such plates is not as yet to be advised in primary traumatic cases, and, in any case, it is still an open question whether they really accomplish their main object of preventing irritation of the cortex. Hence it has appeared to me that the best results in cases where the skull is crushed in by accident are likely to follow the greatest possible conservation of bone, periosteum and membranes consistent with efficient work, with accurate adjustment of the soft parts, especially of the dura and the periosteum, and rapid aseptic healing. In operating through an intact or simply fissured skull, however, as for rupture of the meningeal artery, the matter is quite different. Under such conditions the trend of surgical opinion is strongly toward a more ideal opening and closure of the cranium, and the use of trephines, rongeurs, etc., which sacrifice considerable areas of bone and slowly produce, often, quite inefficient access to the cavity, are deprecated. In such cases osteoplastic resections of large bone flaps (Wagner, 1889) has many advantages, and is strongly to be advised. It is more easy and certain to find and to ligate vessels and to remove clots by this method. But, of probably far greater moment, it is the only method which fully preserves the integrity of the skull and prevents adhesion of the dura. It is certainly the ideal method of closing the skull. As yet the chief difficulty lies in the technique of executing it skilfully.

There is litle question but the chisel is the most practicable instrument for making these bone flaps. When one has become skilful in its use the skull can be opened accurately with great rapidity to almost any desired extent, and the tools are cheap, portable and easily kept in order. One has only to perfect himself into a good workman, and he has always full command of the situation. Unfortunately there is a great objection to this otherwise facile and simple instrument for opening the cranium. The concussion of the mallet is more or less dangerous, especially when intracranial pressure exists, so that a majority of the most experienced in brain surgery, including Horsley and Keen, protest against its use. Various saws have been invented for this purpose, of which Van Arsdale's appears to be theoretically very perfect. While I have not perhaps had sufficient experience with this apparatus to speak dogmatically upon its worth, I have worked with it sufficiently to discover some of its defects, and to fear that I shall never be able to learn to use it with satisfaction. In the first place, the apparatus is quite complicated and expensive, an objection of no great consequence if the practical excellence of its work were commensurate with the outlay and care. The vibrations of the necessarily rather stiff cable render the saw hard to direct with precision, but it is the tendency of the saw to get stuck in the circular

groove in the bone, being removed with great difficulty, that I have found the most discouraging. While very ingenious the saw would appear entirely unnecessarily complicated in constructing it to cut in a circle. There is no especial reason for making osteoplastic flaps circular, in fact, rectilinear flaps are I believe entirely preferable, and I believe Van Arsdale's saw, if simplified to cut a plain straight line, may prove to be the instrument for which we are looking. In any event there is little doubt that the difficulties of osteoplastic resection of the skull will be surmounted. In Germany, where for a time the chisel was so much used, there appears to be a tendency to combine the use of circular saws and chisel, sawing through the outer table and the diploe and finishing with the chisel. In my limited experience on the living skull and the cadaver, I have found it much easier to make the flap rectilinear; then with a very small trephine four holes are made at the respective angles, after which the flap may be completed by the chisel, or by a wire saw passed from one hole to the other between the skull and the dura and cutting from within outward.

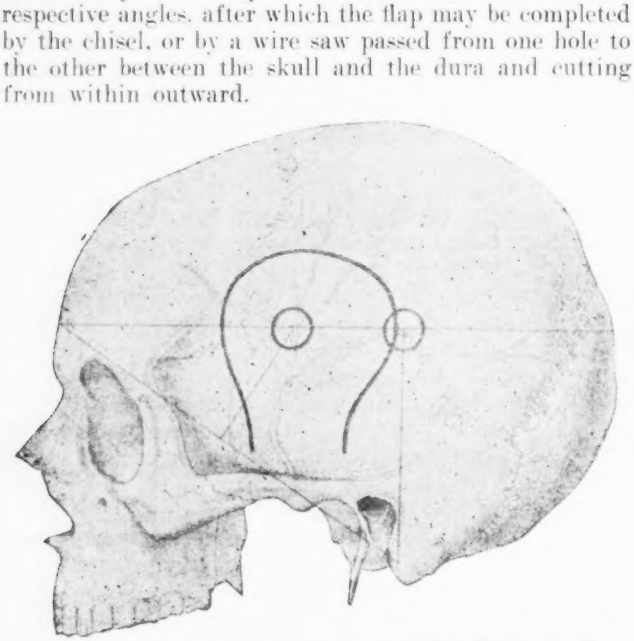

Diagram showing the command of the middle meningeal artery by Wagner's osteoplastic resection, also the method of locating the anterior and posterior branches of the artery in trephining according to Steiner.

Of course every method yet devised has its advantages and disadvantages. The only disadvantage of Gigli's wire saw is in carrying it from one opening to another and getting it buried in the bone without wounding the dura. This danger is not greater, and as easily overcome, as the liability to similar accidents by other methods. Its advantages I think on the whole clearly distance all other instruments as yet devised: 1, exceeding simplicity and cheapness; 2, very considerable rapidity; 3, the saw-cut is exceedingly fine, doubtless the finest that can be made by any method, and as will be seen by the specimen presented, may be cut as beveled as desired so that the resected piece of bone fits back more accurately than if cut by any other method with which I am acquainted.

By the osteoplastic method of operating for intracranial hemorrhage, the matter of localization becomes very simple. A flap with its base just above the zygomatic arch and its summit rising above the inferior temporal ridge, amply commands both branches of the middle meningeal artery, and can scarcely fail to give us the desired access to all operative cases of intracranial hemorrhage. By going well down toward the zygomatic arch, it gives the best command of the middle fossa, or if symptoms indicate pressure on the lower portion of the motor area, it may be placed a little higher. However, it is well to locate and mark by some of the common methods the probable location of the vessels, as it reassures the operator in marking out his flap. The method of Steiner is very simple and as accurate as any. He draws a line from the middle of the glabella to the apex of the mastoid process and erects a perpendicular at the center of the line. Where the latter intersects a third line, passing horizontally through the glabella, there is the anterior branch of the middle meningeal; where a vertical line passing in front of the mastoid intersects the horizontal line, there is the posterior branch.

In emergency surgery, simplicity of methods both in diagnosis and operative technique are of great importance. The fissure of Rolando is readily located by finding its superior end at one-half inch behind half way from the nasal fossa to the occipital protuberance, from whence it runs downward and forward at an angle of 67.5 degrees for a distance of 3⅜ inches. This angle is readily measured by Chene's method of folding a square piece of paper so as to get an angle of 45 degrees, one of the leaves being again folded so as to get an angle of 22.5, which, added to the first, marks an angle of 67.5 degrees. This paper applied to the skull enables us to trace the Rolandic fissure with sufficient accuracy for operative purposes by the large openings now in vogue.

REFERENCES.

1. Gross: System of Surg., vol. ii, p. 62.
2. Archives Med. Belges, June, 1892.
3. Tiffany: Technique of Intercranial Surgery; Annals of Surg., vol. xxvi, 1897, p. 307.
4. McKosh, A. J.: Trephining for Epilepsy: Ibid., vol. xxvii, 1898, p. 670.
5. Chirurgie Opératoire du Système Nerveux, Chipault.
6. Chirurdie d'urgence, Lejars.
7. Meyer, W.: Injuries of the Head; Annals of Surg., vol. xxi, 1895, p. 310.
8. Van Arsdale, W. W.: Technique of Temporary Resection of the Skull, Etc.; Ibid., vol. xxiv, 1896, p. 465.
9. Nancrede: Operation of Trephining for Jacksonian Focal Epilepsy; Ibid., vol. xxiv, p. 122.
10. Von Eislesberg, of Utrecht: Treatment of Bony Defects of the Skull.
11. Horsley, V.: Points in the Operative Treatment of Cerebral Tumors; Med. Jour., Dec. 23, 1893.
12. Minter, H., of Buffalo: Head Injuries, Contributions to Study of; vol. xix, p. 539.
13. Barth, A.: Marburg: Histological Observations After Bone Implantation; Verh. der Deutsch. Gesellschaft f. Chir., xx Kong. (Quoted in Annals of Surg., vol. xviii, p. 460.)
14. Stenzel: Trephining for Hemorrhage After Fracture of the Base of the Skull; Annals of Surg., vol. xviii, p. 460.
15. D'Antona: A New Method of Determining Cranial Topography.
16. Osteoplastic Operation for Bony Defect of the Cranium. Verh. der Deutsch Gesellsch. f. Chir., xx Kong., 1891. (Quoted in Annals of Surg., vol. xv, p. 472.)

THE RELATION AND POSITION OF PELVIC ORGANS. EXAMINATION OF PATIENTS.

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While we know definitely the approximate size and exact structure of the various organs of the pelvis, there is still a great deal of cloudiness and misunderstanding about the true relations and positions of these organs. As an example, one will frequently hear it stated that there is no such thing as a normal position, or even an approximate position of the uterus! If the uterus were an unimportant organ, if it did not have the highest function to perform that is required of any organ, we might, at first thought, think that this one organ did not have a place in which it might be considered at home. Inasmuch, however, as it is such an im-

portant organ, we have a right to assume that it possesses a place, and that it is not simply cast into the pelvis, anywhere, and allowed to occupy any position not already occupied by a functionating bladder or rectum. A prominent gynecologist, in discussing this subject recently, considered it necessary to give the bladder and rectum right of way over this important organ. If it were necessary and reasonable for nature to make such a bungling job of her handiwork, she would have done so, but when it is not necessary nor reasonable, we have a right to assume that she has not. Here it is not reasonable, and she has constructed her organs in such a way that each may normally functionate without interfering with the other. I investigated this subject with great care in the early part of my practice, and made it the basis of my inaugural thesis for entrance into the Chicago Gynecological Society, in 1885. After studying the works of Schultz, Fritsch, and Savage, and after making a minute comparison of the frozen sections of Henle, Fürst, Braune, Heitzmann, Hart, Piragoff, Ruedinger, investigating the theories of Emmet, Garrigues, and others, I arrived at a conclusion which seemed to me inevitable, and, too, which seemed to put me in accord with what nature would be likely to do if she were able. At that time I advanced my

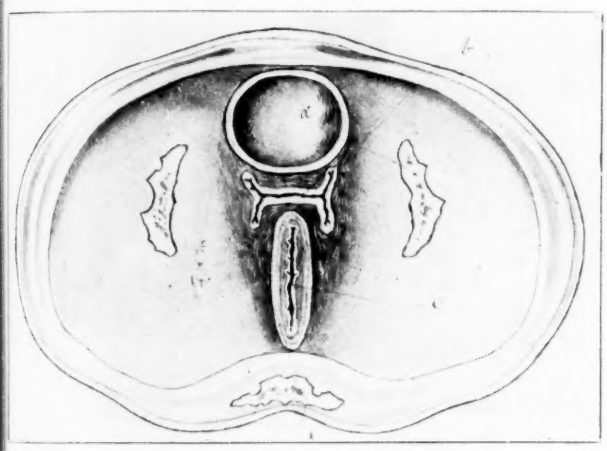

Fig. 1.—*a*, Bladder; *b*, vagina; *c*, rectum; *d*, sacrum.

opinions on the subject, and subsequently on observing the position of the uterus in over 1000 laparotomies, and in the bimanual examination of many others, I am convinced that my opinions expressed in my early thesis were substantially correct, and am prepared to announce that they were substantially based on facts.

The bladder and rectum, contrary to the belief of many writers, perform their normal functions without interfering with the position of the uterus. They dilate and contract in functionating, without pushing the uterus into different locations about the pelvis. A simple fact in their methods of collapse and distension makes this possible. By consulting the simple schematic illustration of Henley, of a horizontal section of the pelvic floor, and making that apply to a section of the pelvis at the cervix and bladder level (Fig. 1), you will find that the bladder and rectum each collapse with the long diameter anteroposteriorly, so that they both occupy as much of the anteroposterior space of the pelvis when they are empty as they can possibly do when they are normally distended. This obviously makes it unnecessary for either organ to interfere with the uterus, as far as the anteroposterior space of the pelvis is concerned, as long as the normal action is maintained.

If you will consult Fig. 2, which represents the normal relation of the pelvic organs with the rectum and bladder empty, according to my ideas, you will notice that the free upper wall of the bladder does not lie in contact with the anterior wall of the uterus. That space, when not occupied with the bladder, normally distended, is filled with light, constantly moving, small intestines. These act as movable upholstery, surround the uterus on all sides, equalizing the abdominal pressure, and fill the necessary vacuum. If the uterus rested on the free superior wall of the bladder, as represented in Fig. 3, that important organ would never have a minute of equilibrium, but would constantly be moving about as the bladder filled and emptied, and as the cervix would remain comparatively stationary, the intra-abdominal pressure would impinge on a different portion of the uterus almost every minute of the day. At the time when the bladder would be empty, the intra-abdominal pressure would be exerted on the whole posterior portion of the body of the uterus in such a way as to positively interfere with the normal distension of the bladder.

My reasons for believing that the uterus occupies, approximately, the position that I have depicted in the drawing, Fig. 2, are the following:

1. Because it is the only position that the uterus can occupy in which it would not be subject to constant, important changes in position, with the normal changes in the bladder and rectum.

2. In this position the intra-abdominal pressure impinges on, or just posterior to, the narrow crest of the uterus, in the direction of its line of axis, and in such a way as to equally distribute the force to all of its supports; and the organ in this position does not receive the whole impulse of the intra-abdominal pressure at one point, but it is equally distributed to all parts of its surfaces and is divided by its lateral, posterior and anterior supports.

3. On opening the abdomen, in laparotomies, the uterus, when not pathologic, almost invariably lies in the position I have described as normal, with the space between it and the bladder filled with light coils of small intestines.

By again consulting Fig. 2, it will be observed that the vagina is parallel with the brim of the true pelvis, the uterus lies in a direction at right angles to the vagina, so that its fundus is on a line with the plane of the superior strait of the pelvis, and just half way between the promontory of the sacrum and the symphysis pubis, with the cervix directed backward, lying within an inch and a half of the hollow of the sacrum. The bladder, when collapsed or moderately distended, is a triangular-shaped body; not flat like a plate, nor contracted into a sphere. The base of the triangle corresponds to the peritoneal surface, the apex to the urethra. The anterior wall corresponds to the symphysis, to which it is loosely attached; the posterior or inferior wall corresponds to the anterior wall of the vagina, to which it is more intimately attached. The rectum, when empty, collapses with the long axis of its diameter in an anteroposterior direction.

The sacro-uterine ligaments prevent the cervix from extreme excursions forward. The anterior vaginal wall prevents the cervix from going too far backward, and the round ligaments restrain the fundus of the uterus from backward dislocation. The vaginal column, the rectum, and the perineum act as a lower floor or cushion for the uterus, while the peritoneum envelops the whole organ above and the broad ligaments restrain it laterally. Its free peritoneal portion is surrounded by coils of small intestines. Finally, this organ, which represents

the principal organ of generation, is surrounded by a bony wall, second to no other wall of protection, except that one which was found necessary to place around the brain. Thus, an organ of paramount importance, it is protected within by elastic guys and cushions, and from without by a bony case.

LYMPHATICS OF THE FEMALE PELVIS.

As gynecologists, it is important that we should know something of the lymphatic distribution from the female pelvis. From a practical standpoint we can cover this in a word. Practically, we should know what route the lymphatics take in leaving the pelvis, so that we may know what glands filter them. (Fig. 5.) The lower end of the vagina and the vulva is drained through the deep and superficial inguinal glands respectively. (Fig. 5a.) Enlargement of these glands, from infection or malignant metastases, would indicate that the source of the infection invasion was in the vulva or lower vagina. The upper two-thirds of the vagina, and the

Fig. 2.—Author's schematic drawing of normal relation of pelvic organs.

cervix uteri, and a portion of the body of the uterus, are drained through the obturator and the deep iliac glands (Fig. 5b), while the lymphatics of the fundus, of the uterus and the Fallopian tubes and ovaries are filtered through the lumbar glands. (Fig. 5c.)

BLOOD-SUPPLY.

Three things particularly interest us in the blood-supply to the pelvis:

1. The arterial supply to the pelvic organs is derived from widely separated points, and it is provided with the freest anastomoses. This appears to be a wise provision to guard against the possibility of depriving the important organs of the pelvis of blood, as a result of a simple accident to any of the parts. For instance, one-third of the blood-supply to the uterus passes through the spermatic or ovarian arteries (Fig. 6), which spring directly from the abdominal aorta and travel a long distance before reaching the organs they supply, while two-thirds of the blood-supply arrives through the uterine arteries from the internal iliac vessels.

2. The veins of the uterus contain no valves.

3. The left spermatic or ovarian vein enters the general circulation at a disadvantage, as it enters the left renal vein at right angles, while the right spermatic vein enters directly the vena cava at an advantageous angle. This fact has a practical bearing, as it partly accounts, no doubt, for the fact that the left appendages are more often diseased than the right.

THE NERVE-SUPPLY.

The female pelvic organs are so abundantly supplied with nerves, both of the spinal and sympathetic varieties, together with numerous nerve ganglia, that this part of the nervous system has been called the abdominal brain (Fig. 7). It interests us to know that the hypogastric plexus, in its continuation below, forms the pelvic plexus, and that from the pelvic plexus arises the vaginal, the uterine, the vesical and the hemorrhoidal plexuses. It interests us to know that these various groups of nerves are intimately connected with each other, and that they are directly formed from the long chain of

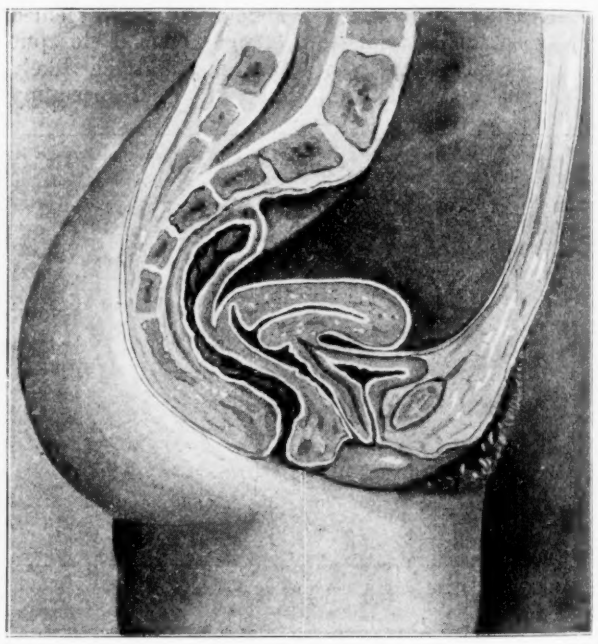

Fig. 3.—Improper illustration, showing uterus too far forward so as to interfere with bladder, and rectum collapsed laterally.

sympathetic cords and ganglia which flank the spinal cord, from, and including, the brain above, to the coccyx ganglion below. It especially interests us to know that these groups of nerves communicate with and are, to a degree, under the influence of the spinal nerves, and therefore the cerebrospinal centers. It is also interesting to know that they have nerve centers of their own in numerous ganglia, distributed about in the course of their branches, and therefore have power to originate independent influence among the organs of their distribution. Thus, the uterus and its appendages possess nerves, 1, of sensibility in the sensory nerves of the cerebrospinal center; 2, nerves of motion in the motor nerves from the cerebrospinal center; 3, communicating nerves, which connect the sympathetic plexus of nerves directly with the cerebrospinal centers, and with other plexuses, by direct communication of fibers, and through the general sympathetic chains; and 4, through nerves receiving their influence directly from the ganglia located in or about the organs.

The study of this great abdominal and pelvic brain is one of great interest and profit to the gynecologist.

because there is nothing corresponding to it in the male which is worthy of comparison with it. It is conspicuously obvious to the thinking man why this is. The uterus, with its great function which makes woman mother, demands this second brain.

THE USE OF THE PELVI-ABDOMINAL BRAIN.

This large network of nerves has many duties. It provides for the intelligent nutrition of these organs from birth to puberty. In this respect the action is common in both sexes. At puberty these nerves provide for the beginning of menstruation. Here the ganglia develop and the automatic cycle of menstruation is cared for. Automatically the nerves of nutrition provide for an enlargement of the pelvis, development of the external and internal genital organs, the enlargement of the breasts, and the storing up of adipose tissue as emergency food for the offspring of the woman.

The sensory nerves of the organs of generation develop *pari passu* with all these changes; the sexual instinct and the powers of sexual gratification are provided for. When conception occurs the wonderful work

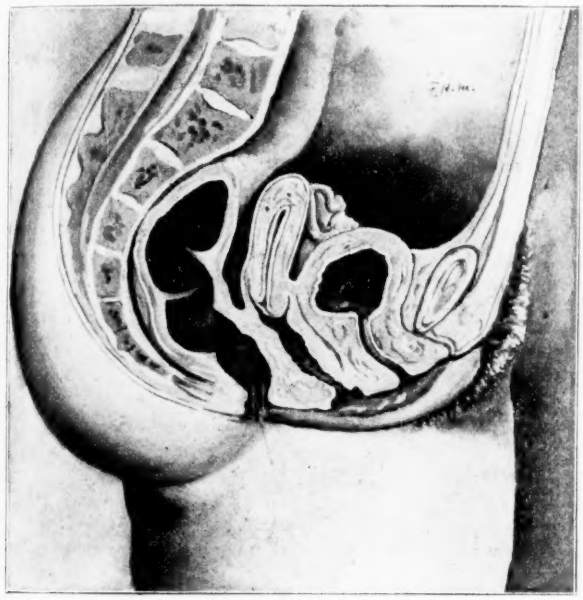

Fig. 4.—Illustration after Savage. Shows uterus too far back. Bladder collapsed like a ball.

of the abdominal brain begins. Through its communicating branches it must immediately negotiate with the heart for more blood for the new requirements for nourishment in the embryo; with the stomach and intestines, with the former to digest more food, with the latter to increase its assimilation; with the breasts for preliminary changes to provide for the required development in their milk glands, and through the cerebro-spinal nerves with the brain, to increase hunger and to develop the affections of the mother for her developing offspring. As the fetus grows, automatically, must the uterus be developed; must other organs of the pelvis and abdomen be carefully prepared to make room for the rapidly growing uterus; must menstruation be stopped; must the ligaments of the pelvis be softened; must the pelvic outlet be gradually prepared for the inevitable birth. All develop, gradually, automatically and intelligently, and as it becomes more complex, is less under the control of the higher brain. It finally becomes the function alone of the nervous system, not connected with the intelligence of the individual. Then the most remarkable thing of all occurs! On a given day, when the time is ripe, without warning, independent of the woman's intelligence, the wonderful labor of birth begins! The cervix is caused to soften and dilate, the muscles of the uterus begin to close around its burden, the head of the child is crowded into the pelvis, the glands of the genital tract everywhere begin to secrete an abundance of lubricating fluid, the cervix fully dilates, the head reaches the sensory nerves of the perineum, and for the first time in months the woman is called on to assist in the great work of bringing forth her child. She is almost compelled to contract the great voluntary muscles of the abdominal wall, and at last the great nervous intelligence of the abdomen has succeeded in its task and has brought forward a child. Finally this network of nerves and ganglia brings forth involution. It expels the placenta, it sends forth a final gush of antiseptic fluid, it contracts the uterus until its great

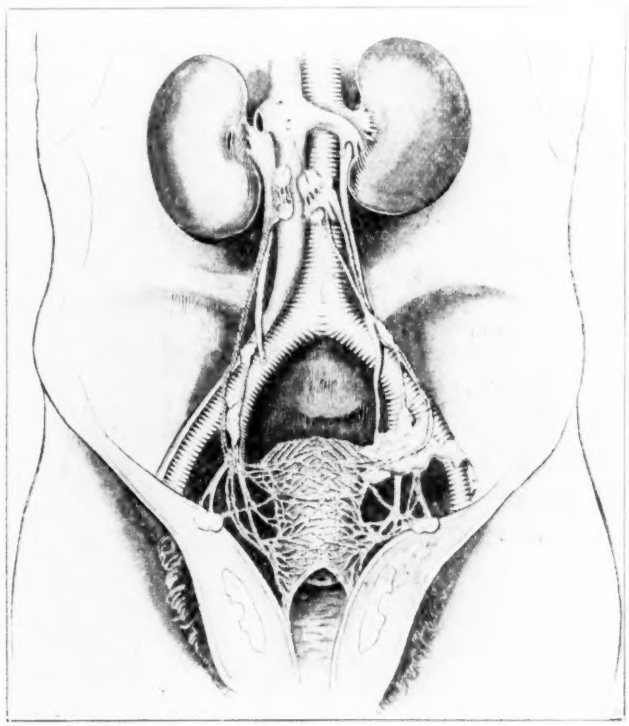

Fig. 5.—Lymphatics of the pelvis. *a*, Deep inguinal glands; *b*, deep iliac glands; *c*, lumbar glands.

valveless veins can not bleed, it causes a rush of blood to the already prepared breasts. This it does immediately. In two days the breasts secrete milk, in two weeks the active nutrition in the pelvis has changed the uterus from an organ of pounds in weight to one of as many ounces, the enormously distended external genitals contract and the woman is again, after nine months of most wonderful experience, a normal woman nourishing her offspring.

The practical side of the fact of the wonderful development of the nerve plexuses in the female pelvis and abdomen, it seems to me, is easy to recognize. This intricate mechanism of nerves which works on automatically in health without friction or pain, or consciousness of its activity to the individual possessing it, accomplishing such remarkable results, is capable of becoming one of the most complicated nests of torture one can imagine, if for any reason the normal arrangement becomes disturbed. It is like a telephone system in a great city, with its many wires, stations and substations, with its short-distance and long-distance 'phones, which when in perfect order are a marvel of

perfection, but which after an accident that destroys a station or grounds a system of wires, immediately becomes a hopeless confusion.

A displacement of the uterus, or a center of infection within its walls, has the effect of disturbing the endings of a large number of communicating nerves; this will result in false impression being conveyed to the heart, lungs, stomach, intestines and brain. As these impressions are not regulated, the functions of these various organs will become erratic and unsymmetrical. In one, the functional activity will become increased, in another decreased. This lack of harmony will soon bring disaster to the nutrition of the body, this will weaken the central nervous system, the will power will be decreased, and in a short time we will have a poorly-nourished, weak, hysterical woman, with but little apparently in the way of local disturbance to account for it all.

HISTORY OF CASES.

Nothing can be of more importance in pointing to a diagnosis in given cases than that which is contained

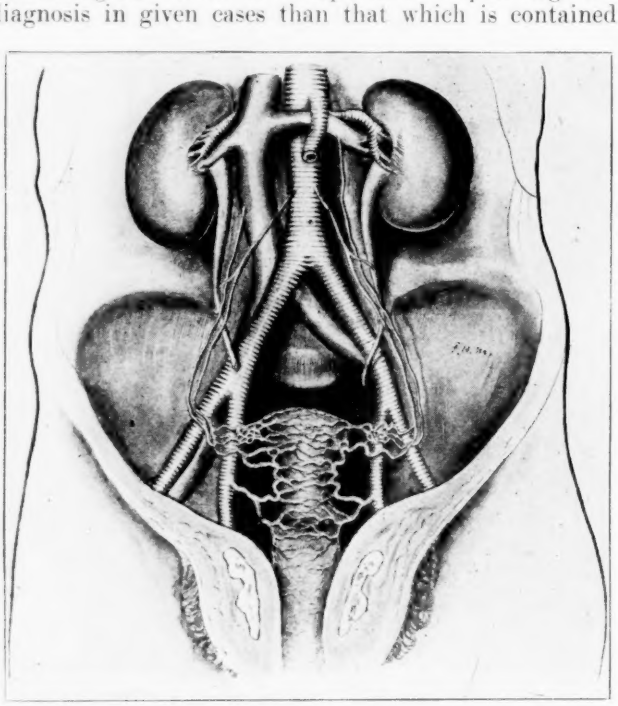

Fig. 6.—Blood supply to female pelvis.

in a well-gathered history. A blank form should be employed, in order that a systematic method may be cultivated, and in order that nothing should be neglected. The necessity of a history is so obvious that I will not dwell on it further than to give one or two examples, which will illustrate its importance in arriving at conclusions.

A young woman will state in the history that at the first menstruation she experienced, it was accompanied with excruciating pains of one or two minutes' duration, and with intervals of rest between of five to ten minutes, that the pains gradually grew less and less, and finally ceased with the termination of the flow. We know here that some form of obstruction existed in this case, and from beginning at the first menstruation it was probably due to non-development of the uterus, with an acute anterior flexion.

A woman gives a history of perfect health up to the time she was married three months ago. Suddenly, after a few weeks of irritation about the vulva, some burning at urination, some discharge from vagina, she had a severe excruciating pain in one side of the pelvis, she went to bed and had a fever; swelling and extreme tenderness of the lower abdomen, chills and sweats, and the doctor treated her for inflammation of the bowels or peritonitis. She finally recovered partially, but has never been free from pelvic pain or irritation since. She has become thin, nervous, despondent, hysterical and an invalid! This woman was infected after marriage by the gonococcus, the infection extended into the tubes, and finally, from overdistension of the pus-tubes, the

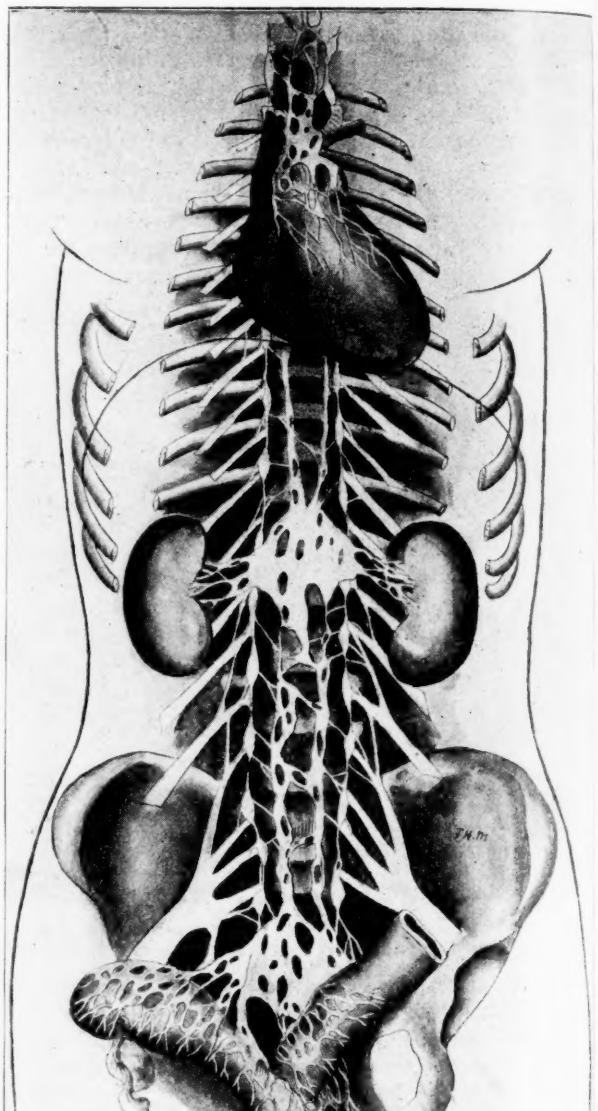

Fig. 7.—Nerve supply to female abdomen and pelvis. The author respectfully refers the reader to Prof. Byron Robinson's original drawing of the nervous system of the female abdomen.

peritoneum was invaded and localized peritonitis developed, the pus cavity was closed off and the peritonitis limited by a wall of adherent intestines and omentum.

A third gives a history of perfect health through a long life of usefulness and child-bearing, and finally reaching a well-earned rest two years before, at the age of 50, by the appearance of the menopause. Within two months, after having been free of menstruation for two years, a gush of straw-colored fluid came from the vagina. This has been repeated two or three times.

and once or twice there has been some bright blood. The discharge has been on the increase some; it has become offensive; she has been losing flesh rapidly; she has had some uterine pain of a steady sharp character. A peculiar change of complexion has developed. She has become unusually weak! This woman has given us the classical history of carcinoma of the uterus.

And so, there are many other stories which will come out in the histories, often making easy the task of diagnosis.

EXAMINATION OF PATIENTS.

The examination of a gynecological patient should be general and local. The *general examination* should be conducted in such a way as to discover if all organs outside of the pelvis are organically healthy. If there are symptoms which indicate that the eyes possess an error of refraction which should be corrected, we should certainly have that point cleared by some one in whom we have confidence. The heart and lungs, the stomach and intestines, should be thoroughly investigated. The condition of the blood, the condition of the urine, should

Figure 8.

both be passed upon by a competent judge. It is due to ourselves that we eliminate, or if it is impossible to eliminate, to at least recognize, any serious organic difficulty outside our own narrow specialty. Nothing can be more humiliating than to wake up to a failure, after giving a patient a long course of treatment, due to our carelessness in recognizing some gross lesion in another part of the body.

The *local examination* consists in inspection and manual manipulation, and the examination with instruments. With a patient lying in a horizontal position, with the limbs fixed so that the bottoms of the feet are resting firmly on the table, with the clothing removed, with the exception of the loose under-garments, the abdomen should be carefully inspected and palpated. The pelvic region is first inspected and carefuly palpated. Unusual enlargement of the uterus, or abdominal growths of large size, will immediately be recognized. The abdomen should be examined for free fluid. The region of the appendix should be carefully palpated in every case, with the idea of determining any indication of tumor. This is accomplished by the examiner standing at the right side of the pelvis and firmly pressing on the abdominal walls near the center of the abdomen, below the umbilicus, and drawing the palmar surfaces of the two hands employed, with less resistance to the right side, allowing the muscles to gradually slip from beneath the fingers. Where a marked induration exists, percussion will give valuable information.

An attempt should be made in every case to palpate each kidney. A normal kidney is with great difficulty palpable. Any marked enlargement of the kidney or displacement is easily recognized. The operator, in attempting to palpate the kidney, should stand on the side of the patient of the particular kidney to be palpated, and should place his left hand beneath the patient's loin, just external to the spine, and just below the short ribs, and the other hand is placed on the abdomen near the center, at, or just above, the umbilicus, and as the upper hand presses firmly, it is drawn toward the operator. This movement will engage the kidney if it is palpable. The same maneuver is carried out on the opposite side.

The next point of importance to palpate, is the region of the gall-bladder. An enlarged gall-bladder can frequently be palpated.

The systematic examination of the abdomen, in every case keeping in mind these prominent points, soon establishes a habit which will make an operator acute in detecting minor changes, and many things will be revealed which would never come out in a simple bimanual examination of the pelvis.

The patient should now be brought to the end of the examining table, with her two feet supported on the stirrups, and the buttocks at the edge of the end. The examiner separates the limbs and makes a systematic inspection of the external genitals. The clitoris is first examined, and the presence or absence of adhesion between it and the prepuce. The meatus of the urethra is next examined. The presence or absence of infection is estimated by the appearance of the mouths of Skene's glands. The presence of polypi or a condition or displacement of the urethra is noted. The large and small labia surrounding the vulva are next inspected for signs of pathology. The mouths of the ducts of the vulvovaginal glands are carefully scrutinized for signs of infection. The perineum is next carefully examined, and its strength estimated by palpating it between a finger placed in the verge of the anus and another in the vagina. The anterior and posterior vaginal walls are observed in order to detect signs of prolapse.

The digital examination of the internal pelvic organs is now in order. (Fig. 8.) The index finger of the left hand should be employed as a routine for the purpose; because the palmar surface of that finger will naturally be directed to the left side of the pelvis, where disease more often exists; because the index finger of the left hand can be trained to a higher sense of acuteness than the strong right hand; because it leaves the strong right hand for external manipulation, which frequently requires considerable strength and endurance; it makes the operator ambidextrous; it reserves the right hand for handling instruments, while they may be directed by the left.

The vagina is rapidly examined with a sweep of the finger; the cervix is then examined, and its size, consistency, and condition in regard to lacerations, or pathological growths observed by the sense of feeling; the position of the cervix in the pelvis is also noted, as this gives a clue to the position of the balance of the uterus.

The operator now attempts to fix the uterus between his finger in the vagina, steadying the cervix, and a hand placed on the abdomen, a short distance above the symphysis, in such a way as to reach the fundus of the uterus. With the uterus in normal position with the vaginal finger in front and beneath the cervix, the fundus can easily be grasped as represented in Fig. 8. If the fundus of the uterus is retroverted, it can be palpated by placing the vaginal finger behind the cervix and pressing the fundus down on it with the hand above. The operator, in making a systematic bimanual examination of the pelvic organs, must succeed in palpating and examining the exact position of the uterus before he can estimate the condition of diseased appendages, or expect to palpate the normal tubes and ovaries.

With the uterus thoroughly in hand, it is a simple matter to pass to the left or right, and examine the tube or ovary, or both, of the respective sides. If the tubes or ovaries are diseased and enlarged, it is comparatively easy, with practice, to grasp them between the hand on the abdomen and the finger in the vagina. When they are normal, and the abdominal walls of the woman are unusually thick, or unusually unyielding, they may not be palpated. Remember that the tube entering the horn of the uterus is soft and inelastic to the touch, that the ovary is deeper in the pelvis at a short distance from the uterus, spherical in shape, and elastic to touch.

Patients should be examined under an anesthetic, preferably ether, if conditions exist making it impossible to make a satisfactory diagnosis of the condition of the pelvis without.

FOUR CASES OF CALCULI IMPACTED IN THE URETER.

NEPHRO-URETERECTOMY. ABDOMINAL URETERO-LITHOTOMY. VAGINAL URETERO-LITHOTOMY.

(From the Gynecological Clinic of the Johns Hopkins Hospital.)

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Among the first to recognize the importance of operative interference in cases of calculus impacted in the ureter was Henry Morris,[1] of London, who as early as 1884 set forth the important principles governing the operative treatment of these cases. Although a considerable number of cases of ureteral stenosis from calculus had been reported clinically, and many in post-mortem protocols, there are but three brief records of operations, previous to Mr. Morris's paper.

In 1882, Bardenhauer[2] reported the successful removal of a stone from the ureter, by retroperitoneal ureterotomy, after which the ureter was closed with fine silk sutures. The other two cases are very briefly mentioned by Emmet,[3] in both of which calculi were impacted in the vesical end of the ureter, one being removed by cystotomy, and the other by vaginal ureterotomy.

Morris's case was that of a woman of 55 years, with a history of renal colic for thirty months, who for six days had had almost complete anuria. On digital examination of the bladder, a calculus was felt impacted in the orifice of the left ureter, and Morris points out that a vesical ureterotomy could have been done had the proper instruments been at hand. In discussing this case, the author says: "I know of no other case in which a calculus has thus been detected during life, although Dr. Rawdon,[4] of Liverpool, has reported an interesting case, in which a calculus impacted in the lower end of the ureter, was detected by a finger in the rectum, during life, and verified after death." The indications for digital exploration of the bladder, with a view to ureterotomy, are thus given. "As regards the question of surgical operation in which there is impaction in the ureter, there is no doubt but that in some of them the calculus could be removed by nephro-lithotomy or pyelo-nephrotomy. . . . and there is good reason to believe that with the more frequent resort to digital exploration of the kidney, through a lumbar incision, a calculus impacted in the upper end of the ureter will not infrequently be detected, and extracted through the loin. . . . . Calculi impacted in the intermediate parts of the ureter are practically beyond the reach of the surgeon." In view of the subsequent history of ureterotomy and the rapid advances which have since been made, these quotations from this early paper of Morris are of much interest.

Among the earlier cases of operation for removal of calculi impacted in the ureter, which have been much quoted throughout the literature on this subject, are those of extraperitoneal ureterotomy reported by Kirkham,[5] Ralfe and Godlee,[6] and Twynam[7] in 1889, and Cabot[8] in 1890; those of intraperitoneal ureterotomy reported by Cullingworth[9] in 1885, and Arbuthnot Lane[10] in 1890; that of combined intraperitoneal and extraperitoneal ureterotomy by Hall[11] in 1890; and that of vaginal ureterotomy by Cabot[12] in 1890.

As the total number of operative cases in the literature is still less than ninety, very many of which are but briefly cited, it has seemed important to report, somewhat in detail, the cases which have come to operation in the gynecological department of the Johns Hopkins Hospital. To these are added the notes of a case recently occurring in the service of Dr. W. S. Halsted. The operation in each of these four cases was done by Dr. Howard A. Kelly.

CASE 1.—(Gynecological number, 6872.) Mrs. M. R., aged 29 years, was admitted to the service of Dr. Kelly, on April 25, 1899, complaining of pain in the left side, back and left lower abdomen, of three years' duration. The patient's family and past history was excellent; she had had four children and two miscarriages; the labors and puerperia were normal.

For the past three years she has suffered from intermittent attacks of dull aching pain in the left side and back, extending down into the left lower part of the abdomen. These attacks have occurred about once a week and usually last from three to four hours, being severe enough to require morphia for relief. The severest attack which she remembers was about one year ago, and this lasted about eight hours. The patient has noticed that the urine is very small in amount during an attack, and when the pain is unusually severe the secretion is almost completely suppressed. After the pain has passed away, however, the amount has sometimes been large, there having been voided as much as a quart in a short time. The urine has often been dark-colored, with a white sediment, but blood, brick-dust sediment or calculi have never been noticed. Micturition has never been painful. She gives no history of chills, fever, jaundice or nausea. The appetite has always been good, but the bowels have been somewhat constipated. There has at times been some headache and vertigo, but these symptoms have never been excessive. There has been no loss of weight and strength has been well maintained.

On physical examination the patient was found to be a well-nourished, young-looking woman. The abdomen appeared quite natural and was everywhere soft on palpation, the edge of the liver, spleen and kidneys not being felt. On deep pressure there was some tenderness in the left flank, but this was not marked. She described, very minutely, the location and direction of the pain during an attack, indicating this by drawing a line, beginning just below the twelfth rib on the left side, at the posterior border of the quadratus lumborum muscle, extending down to the crest of the ilium and thence anteriorally to a point just below the anterior superior iliac spine.

On admission the temperature was 98.6 F., and the pulse 100. The urine was clear yellow, with a specific gravity of 1017,

neutral, and contained a faint trace of albumin. Microscopically there were mucous cylindroids, a few pus cells, a few red blood-corpuscles and bladder epithelial cells, but no casts.

Previous to her admission to the hospital Mrs. R. had been seen by Dr. Kelly at his office, at which time a wax-tipped catheter was passed a few centimeters into the left ureter. On withdrawing the catheter there were definite scratch marks on the polished tip, from which the diagnosis of calculous stenosis of the ureter was made.

The day before operation the right ureter was catheterized, in order to ascertain the condition of the right kidney. In thirty minutes 8 c.c. of practically normal urine were collected, thus demonstrating the efficiency of the supposedly sound side.

Operation was performed May 5, 1899, by Dr. Kelly, with peritoneal and extraperitoneal incisions, nephro-ureterectomy, and drainage.

A catheter was passed into the left ureter and was distinctly felt to be gripped by, and then pass, one or more strictures in the lower part of the pelvis. The patient was then placed on the right side and an incision made midway between the crest of the ilium and the twelfth rib, anterior to the quadratus lumborum muscle, the peritoneum being opened just outside the descending colon. The right kidney and the upper part of the right ureter were palpated and found to be apparently normal. The left kidney seemed rather long, but normal, except for a deep depression in the center. The left ureter, on the contrary, was nodular, and enormously enlarged, being about the size of the descending colon. It was densely adherent at about the middle of the psoas muscle.

The enucleation was begun by shelling out the kidney, it being necessary to release numerous adhesions on all sides. After freeing and drawing the upper part of the kidney into the incision, the hilum was gradually tied off from above downward, taking care not to injure the large dilated pelvis. The renal vessels were tied separately with fine silk ligatures, divided, and the kidney freed, except around the pelvis, which was then slowly dissected free with scissors, as were about 5 cm. (2 inches) of the upper part of the ureter. This portion of the ureter was so firmly adherent to the peritoneum, muscle and cellular tissue that it had to be separated with great care, many small vessels being tied with catgut. The incision in the abdominal wall was then closed with catgut to each layer.

A second incision was now made, extraperitoneally, below the first and similar to that usually employed for tying the iliac artery. This extended mesially as far as the linea semilunaris, and was separated from the first incision by a bridge of tissue, about 6 cm. (2 2/5 inches) wide. The enucleation of the ureter was then continued downward to the brim of the pelvis, and over the bifurcation of the iliac artery, where it was again found densely adherent, and had to be freed by a process of slow dissection. While continuing the separation downward along the floor of the pelvis the peritoneum was inadvertently torn, as was also the ureter, close by the bladder, at the point of stricture. At this point a rough ovoid calculus, 3.5 cm. (1 2/5 inches) long and 1.5 cm. (3/5 inches) in diameter, was found completely occluding the lumen of the ureter.

The ureter was then cut off just below the calculus, and the kidney and ureter removed in one piece, the ureteral stump being closed over with catgut sutures. Considerable pus had escaped from the torn ureter, and, after thorough irrigation, a gauze drain was inserted from above, meeting another placed through the vaginal vault. A third drain was placed in the position of the kidney, and the remainder of the wound closed with interrupted silkworm and catgut sutures.

Ether anesthesia was used, the time of the operation being three hours and twenty minutes. The patient stood the operation well, the pulse at the end being 124 to the minute.

Five hours after, there was a condition of profound shock, requiring most urgent stimulation, but thereafter the convalescence was entirely satisfactory. The drainage tracts gradually contracted down, the remainder of the wound having healed per primam. At the time of discharge from the hospital, the twenty-sixth day, there still persisted a sinus, the size of the little finger, extending 10 to 11 cm. (4 inches) down into the pelvis, and discharging a small amount of thin purulent fluid. There was absolutely no pain and the general condition was excellent.

A letter recently received from Mrs. R. states that she is entirely free from pain, has gained twenty-seven pounds in weight, and is in excellent health.

ABSTRACT FROM PHE PATHOLOGICAL REPORT (NO. 3127).

The kidney is altered in shape and is somewhat enlarged, being 13.5 cm. (5 4/5 inch) long. At the middle of the convex border is a triangular depression 1.5x2.5 cm. (½x1 inch) in size and 5 mm. (1/5 inch) in depth, whose base is rough and consists of dense fibrous tissue. The kidney substance itself is rough, presents well-marked lobulation, is slightly granular and the superficial blood-vessels are dilated. The cortex is dense in consistency, while the pelvis is filled with fluid.

On section, the upper portion is congested, but fairly normal, while at the lower pole the cortical and medullary portions are ill defined and the congestion less marked. Where the depression was noted externally, the renal substance has been replaced by a band of dense fibrous tissue, averaging 5 mm. (1/5 inch) in thickness. The pelvis is moderately dilated, its mucosa pale and smooth, except over the apices of the pyramids, where it is much congested.

The ureter is represented by a large, sacculated cylinder, 20 cm. (8 inches) long, and averaging 3 cm. (1 1/5 inches) in diameter. It is slightly kinked, and contracted at the junction of the first and second quarters, and again at the third and fourth, giving it somewhat the appearance of a string of sausages. The whole is enveloped in a mass of adhesions, containing lobules of fat. On pressure, it is partly fluctuant and partly firm and resistant.

On section, the ureter is of unequal caliber, presenting irregular intervals of dilatation and contraction. The lumen varies from 5 mm. (1/5 inch) to 1.5 (3/5 inch) in diameter. The walls are greatly thickened and edematous, in some places reaching 1.5 cm. (3/5 inch) in thickness. The mucosa is at intervals smooth, at others corrugated. In places it is anemic and thinned out, and in others congested and edematous. The lumen contains a small amount of seropurulent fluid.

Microscopically the kidney shows the changes commonly seen in advanced, chronic interstitial nephritis. Sections of the ureter show it to be ensheathed in a mass of adipose, and newly-formed connective tissue, rich in blood-vessels of moderate size, and showing a general leucocytic infiltration. The walls are greatly thickened, owing in part to hypertrophy of the smooth muscle, but chiefly to a thick tunic of connective tissue, external to the muscular coats. This tissue is very edematous and contains several foci of round cell infiltration. This coat in places is 7 to 8 mm. (1/3 inch) in thickness.

The mucosa lining the canal is also thickened. It presents the usual folds, and is covered in general by intact, transitional epithelium. Here and there over the summits of the folds it is thin, sometimes only one layer of poorly staining cells remaining, while at one or two points the surface is denuded of its epithelium. In sections taken at the level of the impacted calculus the lumen is dilated, the folds of the mucous membrane flattened, and the mucosa thinner than elsewhere.

The calculus is ovoid in shape, with tapering ends. The surface is rough, crystalline and of a yellowish-brown color. It measures 3x1.5x1.3 cm. (1 2/5x3/5x2/5 inch), and consists principally of calcium carbonate, with small quantities of calcium and magnesium phosphate.

CASE 2.—(Gynecological number 6598.) Miss K., aged 37 years, was admitted to the service of Dr. Kelly, Johns Hopkins Hospital, Dec. 22, 1898, complaining of a painful swelling in the right side of the abdomen. Except for irregular menstruation, she had always been well and strong until eight years before coming to the hospital, when she first noticed a swelling in the lower part of the right side, which she describes as having been about six inches long and four inches wide. This swelling came on rather gradually, attaining its maximum size in about one week, when, after persisting for three or four days, it gradually disappeared. During this time she felt miserable, was nauseated, had a constant frontal headache and a dull pain in the abdomen, with now and then sharp cramps in the region of the swelling. She does not remember having had fever, and does not recall having passed at any time either unusually small or unusually large amounts of urine.

The subsequent history has been that of a repetition of similar attacks, usually at intervals of three or four months. For the last three years, however, the tumor has been reappearing every three weeks, and for the past six weeks it has remained permanent. During the first few days of this last reappearance the patient had an unusually sharp attack of pain in the right side, was much nauseated, felt feverish and had slight diarrhea. Micturition has never been painful, and there has been no hematuria.

On admission to the hospital the temperature was 99.2 F.

and the pulse 100. The heart and lungs were normal. The abdomen was unsymmetrical, the right half and right flank being more or less completely occupied by an area of elevation, which rose to within 1 cm. (1/5 inch) of the costal margin, and extended 6.5 cm. (2½ inches) toward the symphysis pubis. Its greatest prominence was at the level of, and 1 cm. to the right of, the umbilicus. On palpation no definite tumor mass could be made out, one simply feeling a distinct area of resistance, extending downward from below the costal margin. The percussion note over this area was flat. Rectal and vaginal examinations were negative.

Urine on admission: The catheterized specimen was smoky, with a small amount of reddish precipitate, consisting of a large number of red blood-corpuscles, a few leucocytes and a few epithelial cells from the bladder; specific gravity, 1023; reaction acid. A trace of albumin was present; sugar test negative.

Operation, Dec. 24, 1898, was performed by Dr. Kelly, with abdominal uretero-lithotomy, suture of the ureter with fine silk and drainage.

An oblique incision, 20 cm. (8 inches) long was made over the prominence of the tumor, beginning posteriorally and extending downward and to the left. The peritoneum was opened, exposing the large dilated pelvis of the right kidney, pointing out anteriorally, the kidney cortex, which was only .5 cm. (½ inch) thick, being confined to the upper and outer pole. A free incision was then made into the lower pole of the sac, evacuating 370 c.c. of pale urine, and with it a little flat, dark colored stone 6 mm. (1/5 inch) long. The sac was so large and irregular that a search for the opening into the ureter was unavailing. The colon was then pulled over and a further search on the outside of the sac made without result, until the ureter was picked up, with the ovarian vessels, at the pelvic brim, pulled down in order to make it tense, and then followed up step by step into the cellular tissue behind the colon.

When a point 3 cm. (1 1/5 inches) below the renal orifice was reached, two stones were plainly seen and felt, firmly lodged in the lumen of the ureter. The calculi were 12 to 14 mm. (½ inch) long, the lower one being a little the larger. The ureter below them was normal in size and appearance. As suggested by Israel, an attempt was now made to push the stones up into the pelvis of the kidney, in order to remove them through the pelvic opening already made, but this was impossible without tearing the ureter.

The ureter, at the level of the impaction, was then freed of all its connective tissue envelope, and by means of a rope of gauze passed beneath it, pulled down within easier reach. After making a longitudinal incision, through the ureteral wall over the lower third of the lower stone, an unsuccessful attempt was made to dislodge it. As it could not be moved, the incision was carried upward, exposing the whole stone, when it was lifted out with difficulty, on account of the firm adhesions to the ureteral wall. The upper stone could not be pulled down and extracted through this opening, it being necessary to continue the ureteral incision until it was 3.5 cm. (1 2/5 inches) long. The second calculus, also adherent, was then picked out, leaving behind a roughened ureteral wall, which was considerably thickened at this level.

The incision in the ureter was then closed with twelve fine silk sutures, placed about 3 mm. (⅛ inch) apart, great care being taken not to encroach upon the lumen of the tube. The opening in the renal pelvis was sutured with interrupted stitches of fine silk, and the wound closed, with lateral drainage from the peritoneal cavity.

As an anesthetic 420 gms. of ether were given, the time of operation being two hours and four minutes. Throughout the operation the condition of the patient was alarming, the respirations being shallow and the pulse weak and rapid—140 to the minute. The general condition, however, was somewhat improved by a submammary infusion of salt solution.

The fluid evacuated from the hydronephrotic sac measured 370 c.c. (12 oz.), had a specific gravity of 1006, and was neutral in reaction. It contained a trace of albumin, no sugar, and its urea equalled .0014 gms. per c.c. Microscopically there were a few red blood-corpuscles and leucocytes.

The patient rallied well from the operation, her highest temperature being 101 F., on the evening of the third day. During the first week after operation the urine contained considerable quantities of blood, but this gradually diminished, and at the time of her discharge the analysis was as follows: Dark amber, with a small amount of reddish precipitate, consisting of red blood-corpuscles, leucocytes, ammonium urate and triple phosphate crystals, and a few hyaline casts; specific gravity, 1015; reaction, neutral; no albumin; no sugar.

The gauze drain was gradually removed, beginning on the sixth day. Except at the point of drainage, the wound healed *per primam*, and the subsequent convalescence was uneventful. She was discharged from the hospital on the thirty-first day after the operation.

Since leaving the hospital the patient's health has been excellent. She has had no recurrence of the attacks of colic from which she suffered previous to the operation.

CASE 3.—(Gynecological number 7762.) Mrs. J., aged 32 years, the mother of two children, was admitted to the service of Dr. Kelly, April 24, 1900, complaining of a swelling in the left flank and of pyuria of long duration. Mrs. J. dated her illness back eleven years, but previous to that had always enjoyed excellent health. During these eleven years she has had repeated attacks of renal colic, most frequently on the left side, but occasionally on the right. These attacks have varied in frequency, sometimes coming as often as once a month, the last one, however, having been about eighteen months ago, when there was a severe attack of pain on the right side. At this time she was examined by Dr. Malloch, of Hamilton, Ontario, who discovered a tumor in the region of the left kidney.

For many years there has been more or less pus in the urine; sometimes the amount is very large and again the urine becomes much clearer for a time. Whether the size of the swelling in the left side corresponds to the amount of pus in the urine the patient does not know. She has never noticed any hematuria, but has been told that there was blood in the specimens examined microscopically. Dr. Malloch also reports that no tubercle bacilli have ever been found, although repeatedly examined for. So far as known, no calculi have ever been voided. Urination seemed to be normal, although possibly somewhat increased in frequency. Mrs. J. thought that the tumor had increased somewhat in size during the past year, but at this time she suffered no pain, and came to the hospital only because advised to do so by her physician.

On examination the patient was found to be a slight woman, fairly well nourished, but with a somewhat sallow complexion. The lips and mucous membranes were pale, the hemoglobin being but 60 per cent.

The abdomen was somewhat asymmetrical, the left flank line bulging abruptly under the costal margin, causing the floating ribs to be displaced laterally. Toward the median line another swelling was apparent, most prominent in the parasternal line, just to the left of the umbilicus and extending downward to within 5 cm. (2 inches) of Poupart's ligament. On palpation a distinct tumor could be felt, extending from beneath the twelfth rib on the left, mesially to within 2.5 cm. (1 inch) of the median line and downward to within 5 cm. (2 inches) of Poupart's ligament. This mass was semi-fluctuant, rounded, and at a point half way between the costal margin and the umbilicus a distinct notch could be felt. The tumor was quite freely movable, descended about 3 cm. (1 1/5 inches) on deep inspiration, and could be pushed for a distance of 5 cm. (2 inches) upward and to the left toward the position of the left kidney. It was slightly sensitive on deep pressure.

The abdomen was everywhere tympanitic, except in the region of this mass, which was uniformly dull on percussion. The right kidney was distinctly palpable. No induration nor tenderness could be made out along the course of either ureter.

On April 25, Dr. Kelly examined the bladder and catheterized both ureters, according to his method with the open cystoscope and air-distended bladder. A wax-tipped catheter was first passed into the left ureter and up into the renal pelvis. The urine began to flow in thirty seconds, and in five minutes 15 c.c. had collected. When the catheter was withdrawn scratch marks were plainly visible on the wax tip.

The right side was then catheterized, also with a catheter tipped with wax. Soon after entering the ureter a partial obstruction was met, but after careful manipulation the catheter could be pushed up into the pelvis of the kidney. On withdrawing the stylet urine immediately began to flow, and in thirty-five seconds 60 c.c. were obtained, thus demonstrating a definite dilatation of the upper ureter and renal pelvis. On withdrawing the catheter it was found to be engaged until within 12.5 cm. of the external ureteral orifice. Deducting 4 cm. (the length of the urethra) and 2 cm. (the distance from the internal urethral orifice to the ureteral opening) the obstruction was computed to be 6.5 cm. (2 3/5 inches) from the bladder. The wax tip, after withdrawal, showed several long, deep stratch marks.

Cultures were made from the separated urines and from the bladder. All three showed a pure culture of the bacillus capsulatus of Friedländer.

The urinary examinations were as follows: Average amount

voided in twenty-four hours previous to the operation, 1300 c.c.; light yellow, diffusely cloudy; specific gravity, 1008; acid; no sugar; albumin present to the amount of one-tenth of 1 per cent. Microscopically, very many pus cells were seen, no casts; no red blood-corpuscles, and no crystalline elements. The urea equalled 3 gms. to the liter.

Urine from the right kidney: April 25, light yellow, with a flocculent white precipitate; acid; no sugar; a trace of albumin. Microscopically, pus cells and a few red blood-corpuscles were seen, but no casts and no crystals. The urea equalled 4 gms. to the liter.

Urine from the left kidney: Very pale, diffusely cloudy; faintly acid; no sugar; albumin present in much larger quantities than on the right side, but the amount obtained was not sufficient for a quantitative test. The precipitate of pus was also much greater than on the opposite side. Microscopically, there were many pus cells, large epithelial cells from the renal pelvis, and a few red blood-corpuscles; no casts and no crystals. The urea equalled 2¼ gms. to the liter.

On April 27, a radiograph was taken by Dr. C. L. Leonard, of Philadelphia, who happened to be present in Baltimore at this time. The plate distinctly showed a shadow in the region of the left kidney and another, about the size of an almond, on the right side. This appeared to be located in the position of the right ureter, at the point where it crosses the pelvic brim, and therefore appeared higher up than the position made out by the catheter. As was later shown, this error was due to the obliquity of the rays.

Operation was performed April 28, 1900, by Dr. Kelly, with left lumbar nephrolithotomy.

An incision 8 cm. (3 1/5 inches) long was made through the skin and subcutaneous fat, extending downward and forward, directly over Petit's triangle. By pushing the external oblique muscle forward and the latissimus dorsi backward the fibers of the internal oblique muscle were exposed. By separating these fibers the thin fascia of the transversalis muscle came into view, and was incised, exposing the perirenal fat around the lower third of the kidney. After tearing away a portion of this fat the renal pelvis was aspirated, considerable purulent urine withdrawn, and a calculus demonstrated. A blunt artery clamp was then thrust through the kidney substance, the opening thus made being slowly enlarged by blunt dissection. A large dendritic calculus was then removed, the stone being partially crushed during its extraction. This was followed by very free hemorrhage from the renal parenchyma. Failing to control this with sutures, the incision was tightly packed with gauze and a firm gauze compress applied to the wound, a portion of which had been closed with interrupted silkworm-gut sutures.

Chloroform was used for anesthesia, the time of operation being twenty-five minutes. The pulse at the end of operation was 64 to the minute.

The convalescence from the operation was very satisfactory. For three days there was an abundant discharge of urine from the sinus, the amount, however, decreasing until the packing was removed on the tenth day. The opening of the sinus caused the amount to increase, but after several days it began to diminish, and on the twenty-third day there was practically none, the patient voiding 2190 c.c. (70 ounces). The temperature on the third day touched 103 F., thereafter being about 100 until the twelfth day, when it became normal and remained so. The urine following this operation had practically the same characteristics as that previously passed.

On account of the profuse bleeding which took place during the operation, it was not deemed best to remove the calculus from the right ureter at that time. On the twenty-sixth day, however, the patient's condition was excellent, the pulse being 70 and the temperature 98.4 F., and the second operation was done.

Second Operation.—On May 23, 1900, Dr. Kelly performed an exploratory laparotomy with vaginal ureterotomy.

Before beginning the operation both ureters were catheterized. The left ureter was patulous and urine flowed freely from the catheter. On the right side the same resistance was met as at the previous examination. The right catheter was left in place.

An incision 12 cm. (5 inches) long was made in the median line of the abdomen. The left ureter was found to be of normal size, there being no evidence of thickening. On the right side the ureter above the pelvic brim felt normal, and careful palpation of the kidney revealed no stone. The right tube and ovary were adherent over the ureter low down in the pelvis. After the separation of these adhesions the calculus was found to be located about 6 cm. (2 3/5 inches) above the vesical opening. A small bulb syringe was now attached to the catheter, which had been left in the ureter, and the pelvis and ureter were distended with about 50 c.c. of boric solution, in order to move, if possible, the stone into a position more advantageous for extraction. It was found, however, to be adherent and could not be loosened. With the assistant's hand in the abdomen, locating and fixing the stone, it could be felt through the vaginal vault. An incision was therefore made with the sharp-pointed scissors through the vault of the vagina, and the tissues separated until the thickened ureter was encountered. This was then slit open with the "alligator" scissors and the calculus extracted with stone forceps. No attempt was made to suture the slit in the ureter.

The abdominal incision was then closed and a small iodoformized gauze drain placed, from the vagina, against the ureteral catheter, which was left in place.

Chloroform was used, the time of the operation being forty minutes. The pulse, at the end of the operation, was 68 to the minute.

The catheter was allowed to remain in the ureter for sixteen hours, and during this time it drained 650 c.c. of urine. It then became occluded and there was leakage into the vagina. However, this discharge ceased when the catheter was withdrawn and there was absolutely none until the gauze pack was removed, on the ninth day. There was then leakage until the fifteenth day, when it entirely ceased. In every respect the convalescence was perfectly satisfactory and the patient left the hospital on the twenty-seventh day. On that day the urinary analysis was as follows: Amount, 1920 c.c.; light straw color, slightly cloudy, with a small amount of sediment composed of pus cells and epithelial cells; specific gravity, 1010; reaction, acid; a faint trace of albumin.

The calculus removed from the right ureter was the size and shape of an almond. Its surface was rough and of a brownish-black color. The weight was 1.25 gms. (19 grains) and the dimensions 1.8x0.8x0.5 cm.

The condition of this patient remained excellent until the latter part of August, when she developed the symptoms of an acute intestinal obstruction. She was operated on by a surgeon in Canada, but did not survive the operation.

CASE 4.—Mrs. R., aged 56 years, who was admitted to the service of Dr. Halsted, Oct. 19, 1900, had always enjoyed excellent health until the menopause, six years before. Since then her health has been poor, especially during the past two years, when she began to have edema of the ankles and continual drowsiness, with now and then severe headaches. Although she had frequently experienced a dull aching pain in the back, there were never any severe attacks until August, 1900, when she was suddenly seized with a "tearing" pain in the left side, radiating downward into the lower abdomen. Between August and October she had six similar attacks; with the last two, chills and fever. The last attack occurred one week before admission to the hospital. During the paroxysms there was burning pain in the bladder, after which the urine was scanty and highly colored. There was no history of hematuria or the passage of calculi.

The general physical examination was negative. On October 26, at Dr. Halsted's request, Dr. Kelly catheterized the left ureter with a wax-tipped catheter, which passed readily into the renal pelvis without resistance. Immediately on the stylet being withdrawn turbid urine began to flow and, in four minutes 30 c.c. were collected, showing a marked hydronephrosis. The patient was then placed on her right side and pressure over the left kidney caused 5 c.c. more to flow, distinctly more cloudy than the first portion collected. Cultures made from the urine as it flowed from the catheter showed the infection to be caused by the bacterium coli commune.

The catheter was then withdrawn 3 or 4 cm., and was felt to be grasped and then pass by an obstruction. It was then readily withdrawn and distinct scratch marks were seen on the wax tip.

The diagnosis of calculus of the renal pelvis, with associated hydronephrosis, was made on the following points: 1, scratch marks on the wax tip; 2, gripping of the catheter at a point high up; 3, large amount of urine collected in a short time; 4, infected urine. This confirmed the diagnosis which Dr. Halsted had previously made.

Operation, by Dr. Halsted, was performed Oct. 29, 1900—left lumbar nephrotomy.

After laying open the pelvis of the kidney, a careful search of each of the calices failed to reveal a stone. A waxed bougie was then passed down the ureter and was felt to meet an obstruction 27 cm. from the kidney, past which it was gently pushed. On withdrawal distinct stratch marks were found on the wax, demonstrating that the calculus, which had previously

been felt high up, had slipped down to a point only a few centimeters from the vesical opening.

A vaginal examination was then made by Dr. Kelly and a nodule felt, high up in the left fornix. The vaginal wall was friable and broke down during the examination, allowing the stone to be worked down for a distance of about 4 cm. The ureter was then incised and a rough calculus weighing 2 grs., and measuring 1x0.5x0.4 cm., pulled out by means of a small tenaculum. A gauze drain was inserted into the vagina.

The patient made an excellent recovery. There was leakage of urine into the vagina, abundant at first, but gradually becoming less, and ceasing entirely on the sixteenth day.

DIAGNOSIS.

Unfortunately the diagnosis of calculus stenosis of the ureter is most difficult. While lumbar pain, associated with anemia and a fixed point of tenderness, may give important clues to this condition, it is often quite impossible to make the differential diagnosis from renal calculus. When the stone can not be felt through the vagina, rectum or abdominal wall, as has been done in thin individuals, there are but two satisfactory means of diagnosis, that of catheterizing the ureters with a bougie tipped with wax, as was done in Cases 1, 3, and 4, and since successfully employed by Dr. Kelly[13] in a case recently reported, and that of radiography, which in the hands of a few workers has given most excellent results. When the diagnosis can not be made by any of these means, resort must be had to an exploratory celiotomy, with direct palpation of the ureter, or a lumbar nephrotomy with probing of the ureter.

The impaction of stones, descending from the kidney, is due not only to their size and irregularity of form, but also to peculiarities of the ureter along its course, giving these well-recognized points of predilection for their arrest: 1, from 3 to 6 cm. (1 1/5 to 2 2/5 inches) from the kidney; 2, at the point where the ureter crosses the iliac artery; 3, at, or just above, the vesical orifice of the ureter.

In tabulating 84 operative cases, the position of the stone was found cited in 81. In 19—23.4 per cent.—the calculus was located within 6 cm. of the kidney; in 8—9.8 per cent.—at or near the pelvic brim; while 41—50.6 per cent.—were found within 5 cm. (2 inches) of the vesical opening, leaving but 16.2 per cent. for all other locations.

ROUTE FOR REMOVAL OF STONE.

The route to be selected for the removal of an ureteral stone depends of course upon the position of its impaction. If the calculus is located in the vesical portion of the ureter, i. e., that portion which traverses the bladder wall, it may be reached *per urethram*—in the female—the ureteral opening being either dilated or the mucosa slit sufficiently to allow the extraction of the stone. This has been accomplished 7 times, with 1 death. When located low down, within 2 inches of the bladder, the choice is between vaginal ureterotomy, reported in 13 cases, with 1 death; rectal ureterotomy, chosen by Ceci,[14] whose patient died twenty-six hours after operation; vesical ureterotomy, of which there are recorded 5 cases, with 1 death; or ureterotomy through a perineal incision, done successfully once.

When the calculus is so situated that it can not be reached by any of these operations, the ureter should be exposed by an extraperitoneal incision, a longitudinal slit made in its wall over the stone, which is then extracted, and the incision closed with interrupted fine silk sutures. The possibility, however, of the coexistence of renal calculi, warrants the exploration of the pelvis of the kidney in cases where the extraperitoneal incision is sufficiently high to allow the kidney to be brought out of the wound and palpated.

On the other hand, ureterotomy through an abdominal incision is a more dangerous operation, on account of the liability of infection, and less desirable, on account of the possibility of a more troublesome fistula, should a sinus result. Transperitoneal ureterolithotomy has been reported 5 times (including Case 2) with 1 death, whereas in 24 cases in which the route was extraperitoneal, there have been but 3 deaths. In case the diagnosis has been made through an abdominal incision it is advisable to make, as Thornton,[15] Lloyd[16] and Morris[17] have done, a new incision in the lumbar region for the removal of the stone.

When the renal cortex is found to be degenerated and the pelvis and ureter infected, as in Case 1, here reported, nephro-ureterectomy is the most conservative procedure.

While many cases of stone impacted in the ureter have been noted clinically and in post-mortem protocols, a careful search of the literature has revealed but 81 reports of operations for the relief of this condition. A summary of these operations, including the four cases here reported in detail, follows.

	Operation.	Cases.	R.	D.	Mortality Per Cent.
A.	Nephrectomy—				
	1. Lumbar	3	0	3	100
	2. Abdominal	1	1	0	
B.	Nephroureterectomy	4	4	0	
C.	Nephrotomy (including pyelotomy)—				
	1. Lumbar	16	11	5	31.2
	2. Lumbar combined with celiotomy	2	2	0	
D.	Ureterotomy—				
	1. Extraperitoneal	21	18	3	14.3
	2. Extraperitoneal combined with celiotomy	3	3	0	
	3. Intraperitoneal	5	4	1	20
	4. Vaginal	12	11	1	8.3
	5. Vaginal combined with celiotomy	1	1	0	
	6. Vesical	5	4	1	
	7. Rectal	1	0	1	
	8. Perineal	1	1	0	
E.	Removal of calculus per urethram	8	7	1	12.5
F.	Removal of calculus through an old sinus	1	1	0	
		84	68	16	19

REFERENCES.

1. Morris: Am. Jour. Med. Sci., 1884, vol. 88, p. 458.
2. Bardenhauer: Centralbl. f. Chir., March 25, 1892.
3. Emmet: Principles and Pract. Gynecology, 1884, 3rd ed., p. 796.
4. Rawdon: British Med. Jour., 1879, i, p. 152.
5. Kirkham: The Lancet, 1889, i, p. 525.
6. Ralfe and Godlee: Ibid., p. 428.
7. Twynam: British Med. Jour., 1890, ii, p. 648.
8. Cabot: Boston Med. and Surg. Jour., 1890, p. 247.
9. Cullingworth: Trans. Path. Soc., vol. xxxvi, 1885, p. 278.
10. Lane: The Lancet, 1890, ii, p. 967.
11. Hall: Medical Record, 1890, vol. 38, p. 430.
12. Cabot: Boston Med. and Surg. Jour., 1890, p. 247; Am. Jour. Med. Sci., 1892, vol. cili, p. 43.
13. Kelly: Jour. Am. Med. Assn., March 3, 1900.
14. Ceci: La Reforma Medica, Sept. 5, 1887.
15. Thornton: Harveian Lectures, 1889.
16. Lloyd: British Med. Jour., 1896, ii, p. 1203.
17. Morris: Hunterian Lectures, 1898, p. 77.

Warm Baths in Cerebrospinal Meningitis.—Dr. Osler is treating cerebrospinal meningitis with warm baths every third hour, and lays great stress in the prognosis on the tendency to relapse, the "intermittent" type of old American writers. There have been 9 deaths in 23 cases treated. No case of meningitis in typhoid fever has been seen in the Johns Hopkins Hospital. At least 8 different germs have in recent years been reported as the cause of acute rheumatic fever, all of pyogenic origin. Not a single death directly due to rheumatic fever has occurred in the eleven years since the hospital was opened, yet it is responsible for more deaths than any single fever; 75 per cent. of cases of valvular disease of the heart are its sequels. In Baltimore, in 1899, 500 deaths were attributed to heart disease. The chief indication in the treatment is relief of pain, which is often promptly secured by the salicylates, especially in children. Morphin should be given freely. In protracted cases he looks out for gonococcus infection and arthritis deformans. The salicylates do not protect the heart.

THE DIFFERENTIAL DIAGNOSIS OF ECTOPIC PREGNANCY.

WITH ESPECIAL REFERENCE BETWEEN IT AND THAT OF EARLY UTERINE ABORTION.*

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It may seem superfluous at the present day to read a paper on any topic in connection with ectopic pregnancy, for so much has already been written on the subject. But there is one phase of it which seems to me to have been overlooked, or at least not to have received the attention it merits. I mean the differential diagnosis, but more especially the differentiation of ectopic pregnancy from early uterine abortion.

The writer was the first to treat this matter at some length, in a paper published in the *New York Medical Record*, Nov. 5, 1898. The paper received such general appreciation that he feels warranted in bringing up the subject again before a class of men who usually see these cases before the specialist does and upon whose correct and prompt diagnosis the welfare, nay, the life of the patient frequently depends. He feels further justification, if such were necessary, in the circumstance that further experience has gained fresh examples whereby valuable lives have been jeopardized and even lost by confounding an ectopic gestation for an early intrauterine abortion.

The gynecologist never finds himself in a more distressing and embarrassing position than when he is called in a case of serious intraperitoneal hemorrhage from a ruptured tubal pregnancy, which for days and perhaps for weeks has been treated by the family physician as a mere miscarriage. There is no other mistake which the doctor could commit which receives less charity at the hands of the laity, and still it is a mistake of which the most astute specialist is occasionally guilty. From this you will infer that I am not one of those men who think the differentiation is always easy, and that all we have to do to avoid the error is to pin our faith upon one or two so-called pathognomonic symptoms. In my opinion men have frequently fallen into error just because they have accepted the dictum of writers who have laid great stress upon one or other symptom of extrauterine pregnancy. One would consider "colicky pains," another irregular hemorrhage after an amenorrhea of longer or shorter duration as pathognomonic; but of this later on.

The classic symptoms of ectopic gestation, such as irregular uterine hemorrhage after a variable period of amenorrhea, sudden seizure of severe pain of a certain character, the expulsion of a decidual sac, the presence of a characteristic tumor at either side of the uterus or in Douglas's cul-de-sac, are rarely witnessed at the bedside. Where they are present, as they sometimes are, the diagnosis offers no difficulties. But that the apparent association of these symptoms may at times lead to error, the following case occurring in the writer's practice will forcibly illustrate.

CASES OF INFLAMMATORY CYSTIC TUMOR.

A medical friend asked me to see a young woman who had been married but a few months. She had passed her period for about three days, when she began to flow, at first slightly and later quite profusely, and continued for a much longer time than was usual with her. The flow was rather irregular and was attended with severe pain which might be characterized as of a "colicky" nature. I found the patient moderately anemic, with a slightly distended abdomen. While the patient sat up in bed to urinate she had a fainting spell—a symptom upon which I had learned to place great reliance, excepting in very nervous patients, as a sign of intraperitoneal hemorrhage. On examination the uterus was found slightly enlarged, and to the left of it was an elastic mass the size of a hen's egg, which was very sensitive and apparently fixed. Owing to the great sensitiveness of the patient, the exploration of the pelvic cavity was attended with difficulty. I had no data to guide me as to whether the mass on the left side was of recent origin or not, the patient never having been examined prior to her present illness. Everything seemed to point to an early tubal pregnancy. Still, I took the precaution to say that, while the symptoms were indicative of that condition, it might be only a very early uterine abortion, associated with a cystic ovary. I advised that the patient be placed under narcosis for the purpose of a more satisfactory examination and for such surgical intervention as might be deemed necessary as the result of our findings.

This advice was adopted, as was also that of having another specialist present to examine her with me. As soon as she was under full anesthesia and relaxation of the abdominal walls was obtained, it was fairly easy to detect that the mass on the left side was cystic and probably was of the left ovary. After a thorough curettage, which removed very little tissue, the consultant was in favor of not doing anything more for the present and waiting for further developments. I prevailed upon him however to consent to my making an incision in the posterior vaginal vault, so that I could at one and the same time positively determine the character of the tumor and remove it. It proved to be a cyst of the size of a hen's egg, with very thin walls, and probably of an inflammatory nature. The adnexa were found moderately adherent, but otherwise apparently normal.

The patient made a satisfactory and afebrile recovery, and was out of bed at the end of ten days.

I have followed this plan of making an incision through the vagina into Douglas's cul-de-sac in quite a number of cases in which there was any doubt, and have always found it of great value. In more than one instance, had I not adopted this plan, the true condition would have been overlooked, for even under narcosis it was impossible by bimanual examination to determine the presence or absence of free blood in the peritoneal cavity. However, after making the incision and ascertaining the presence of a ruptured tubal pregnancy, unless the conditions were very favorable, the operation was completed by a suprapubic incision; but this is a digression.

These inflammatory cystic tumors are often cause of considerable anxiety, as is evidenced by the following case: I was examining a woman in rather prominent social circles one day in my office, for delayed menstruation and some discomfort in the lower abdomen. She was very stout and the bimanual examination was rather difficult. I found the uterus slightly enlarged and detected, to the left of this organ, a cystic mass the size of a mandarin orange. While palpating this mass it suddenly ruptured and the patient promptly went into syncope. It took some time before she rallied. I was in much dread that a tubal gestation sac had ruptured and that the effusion of blood into the peritoneal cavity

* Read before the New York State Medical Association, at the annual meeting, held in New York City, Oct. 15-18, 1900.

was the cause of the syncopal attack. I had the patient carefully watched for a couple of days, and as there was no recurrence of the syncopal attacks and no other symptoms developed, I concluded that the mass which had ruptured and disappeared was nothing more than one of those inflammatory cysts which occasionally accompany localized peritonitis and subacute metritis. The subsequent history of the case proved my conclusion to be correct.

ECTOPIC GESTATION VS. INTRAUTERINE ABORTION.

The following case in my own practice will show how easy it is to fall into the error of mistaking an ectopic gestation for an intrauterine abortion, and the importance of making an incision into Douglas's cul-de-sac when in doubt. I was called one morning to see a woman on whom I had performed an amputation of the cervix some years before. Her history pointed to a simple abortion at about the third week of pregnancy. A local examination seemed to confirm this diagnosis, for beyond a slightly enlarged uterus, with the cervix rather patulous, nothing was detected. It is true, the examination was not very satisfactory, owing to a thick abdominal wall and moderate flatulent distension of the intestines. She was admitted into St. Mark's Hospital to be curetted. When she was narcotized, on examining her I was surprised to find an ill-defined mass behind the uterus, which seemed to possess the characters of an inflammatory exudate. After curetting the uterus and removing considerable decidual tissue, I determined to ascertain the nature of the mass by vaginal exploratory incision. The mass proved to be made up of old and fresh blood clots; and as the ruptured tube was not accessible through the vaginal incision, I made an incision through the abdominal parieties and removed it. The patient made an uneventful recovery.

In the paper referred to I cited several instances in which the patients had been treated for weeks by the family physician, and had been repeatedly curetted for a supposed uterine abortion when the condition was that of a ruptured tubal pregnancy. Since then I have seen quite a number of cases in which a similar mistake had been made. I am not finding fault with the attending physicians for having made such an erroneous diagnosis, for as I frankly confessed, it is one we are all liable to make at times. But I do strongly condemn the plan usually adopted by the attending physicians in these cases—that of attempting to curette the uterus without general anesthesia. I say "attempting," for in early cases of abortion it is impossible, in the majority of instances, to satisfactorily curette the uterus, to say nothing of the practical difficulties to do it under aseptic precautions, unless the patient is fully anesthetized. What is the usual result of such a procedure? The uterine hemorrhage persists and the physician concludes that he has not removed all the uterine contents, and curettes again, also without anesthesia, and perhaps is forced to repeat the operation a third time if the confidence and patience of his patient have not already been exhausted. In many instances after the first curettage, done under imperfect asepsis, the patient is made septic, and what was a favorable condition is probably converted into a hopeless one.

The general practitioner should therefore make it a rule never to undertake to curette for a supposed abortion without anesthetizing his patient. Every case of supposed early uterine abortion should be looked upon with suspicion, and unless the case is an especially clear one and not requiring any surgical intervention, the patient should be anesthetized as early as possible. This is to be done first for the purpose of making a rigid and thorough examination to exclude an ectopic gestation, and secondly for the purpose of performing a proper curettage under satisfactory aseptic precautions.

The attending physician is often severely censured when the chief blame attaches to the patient, as is demonstrated in the following case. The patient, after a period of amenorrhea of seventeen days, began to stain; a week later she had abdominal pain, with the persistence of the slight flow. She made light of these symptoms and ignored the advice of her physician to be curetted. While at her place of business one day she expelled a mass which she asserted was the fetus; that it resembled the yellow of an egg and was not a mere blood-clot, as it failed to be broken up with the fingers. She triumphantly told this to her physician, and said: "I told you it would come away of its own accord; several others have on former occasions." About three weeks later she was suddenly seized in her store, while in the water-closet, with symptoms of collapse. She was brought home with difficulty, in a cab, and I saw her at 10 p.m., about six hours after the foregoing event. She was extremely anemic, with a pulse of poor volume, about 120 to the minute. She was apathetic and did not seem to suffer any pain. The abdomen was very large and fat and quite hard. On vaginal examination an irregular mass behind and to the left of the uterus could be felt. The diagnosis of a ruptured tubal pregnancy was made and an operation urged. Consent was finally obtained to perform it on the following morning. When the patient was placed on the table for operation she went into profound collapse, from which she did not rally and died about an hour later. The abdomen was rapidly opened. It was found full of blood and swimming among the clots was a fetus of about ten weeks. The family severely blamed the attending physician because he said it was only a slight matter and required an insignificant operation. Had he taken the precaution to say that a curettage under full anesthesia was imperative just as much to make certain that nothing but a uterine abortion existed as to empty the uterus, he would have averted all reasonable grounds for complaint, and the life of his patient might have been saved.

The foregoing case is of further interest in that it shows that the onset of uterine hemorrhage, and even the expulsion of a decidual membrane, are not indicative of the death of the impregnated ovum. These phenomena occurred when the patient was pregnant presumably six weeks, while the fetus showed a development corresponding to the age of ten weeks.

SYMPTOMS OF INTRAUTERINE PREGNANCY.

We may now profitably take up an analysis of the prominent symptoms of extrauterine pregnancy, comparing them with those of early uterine abortion.

Uterine Hemorrhage.—The flow attending a ruptured tubal pregnancy is as a rule less profuse and more irregular than that which accompanies uterine abortion. It is more likely to occur as a mere show which comes and goes, while in uterine abortion the flow is more continuous. Still, there are numerous exceptions to this rule. I have seen very profuse uterine hemorrhage in tubal pregnancy, and Martin reports a case in which it was so severe as to even cause the death of the patient. On the other hand, a threatened uterine miscarriage may drag along for a time with a very scanty flow, which may even be irregular, coming and going as it

does in extrauterine pregnancy. I have now under observation a case of impending uterine abortion, in which the flow has been scanty for several days, in which it ceases during the night and while the patient is in bed. I recall other cases in which the slight flow would cease for a day or longer, even while the patient was up and about. However, when a woman has passed her period for a few days only and begins to have an irregular and scanty flow, a suspicion of extrauterine pregnancy ought to be entertained. On the other hand, I have seen cases in which rupture of an extrauterine pregnancy had taken place without the patient having missed a period. In one case rupture of the tubal pregnant sac had taken place seventeen days after the last menstrual flow, which apparently was normal in every respect. Similar cases have been recorded in the literature.

Pain.—A great many writers have laid great stress upon the "colicky" nature of the pain in extrauterine pregnancy. Some have gone so far as to deem it a pathognomonic symptom. Even if the same pathologic lesion occurred each time, and the sensations it produced were exactly similar, patients would describe them differently. But we know the lesions are variable; at one time there may be a rupture of the tubal sac, at another a mere expulsion of the fetal sac through the "ostium abdominale," constituting a tubal abortion; and again at another a hemorrhage into the tubal wall forming tubal mole. It is not reasonable to suppose that these different lesions would evoke exactly similar sensations, and as a matter of fact the character of the pain attending the termination of a tubal pregnancy is as variable as is the color of the chameleon. It may be sharp and lancinating, or it may be of a bearing-down character, as in dysmenorrhea, or it may resemble labor pains, or simulate an ordinary colic, or be characterized as a tearing, agonizing sensation which can not be endured; or, again, it may be of a throbbing nature, like that attending an inflamed ovary. The patients whom I have seen more frequently have described it as resembling the pain attending labor. It must not be forgotten in this connection that pain of any description may not form a prominent symptom of tubal pregnancy. In one of my own cases cited above, the patient made no mention of any pain, and in several other cases the symptom was confessed only after repeated questioning.

In my former paper I stated that the one symptom in my experience, that has afforded me the strongest clue, has been the occurrence of fainting spells with the attacks of pain. But I went on to say that too much reliance should not be placed upon this symptom, as it was frequently absent and was occasionally met with in uterine abortion in nervous and hysterical women. It was present in the case of early abortion, associated with an inflammatory cyst, reported in the early part of this paper. Still, with certain precautions, it forms a symptom of some value as indicative of intraperitoneal hemorrhage.

Expulsion of Cast.—The expulsion of a decidual cast or membrane from the uterus is an objective sign to which great importance has been attached. I can do no better than quote what I wrote on this topic in the article already referred to, inasmuch as increased experience has only confirmed the assertions made then. "In the first place there is no membrane discharged in a great number of cases, the decidua either being cast off in shreds or undergoing degeneration. In the second place it may be expelled unnoticed in the blood-clots. Thirdly, when questioned, the patient will often reply that she has passed a membrane, when what she actually passed was a semi-organized blood-clot. Lastly, and most important of all, is the fact that even the most expert microscopist can not distinguish between the decidual cells of a uterine pregnancy and that of a tubal gestation. This fact nullifies the advice given by some authors to curette the uterus in a suspicious case and examine the tissues removed for decidual cells. Not alone would the findings of decidual cells form no proof even of uterine pregnancy, for so able a microscopist as Carl Ruge[1] has stated that in the absence of the pregnant state he found decidual cells in diseased conditions of the uterus."

How misleading the statements of the patient are, even though they be intelligent, regarding this point, is forcibly illustrated by the fatal case reported in this paper. The patient was experienced in such matters, having had several miscarriages, and she was positive that what she had passed was a very small fetus. This assertion helped to throw the attending physician off his guard. Of course the detection of chorionic villi in the expelled products would be positive proof that the gestation was intrauterine.

The local signs of early extrauterine pregnancy are not characteristic enough to be of any value to us in doubtful cases. It is very easy to overlook or rather to be unable to detect the slightly enlarged tube on bimanual examination, especially in the presence of a thick or rigid abdomen. On the other hand, an inflamed and enlarged tube may possess all the characters of a tubal pregnancy. Some authors lay stress upon the vagina being soft and lax, and on the pulsations of the vaginal arteries. These signs savor too much of finesse to form safe guides in perplexing cases.

SOURCES OF ERROR IN DIAGNOSIS.

The principal sources of error in the differential diagnosis of ectopic pregnancy, besides the condition already mentioned, are the following: 1. Irregular enlargement or sacculation of the pregnant uterus, forming apparently an independent tumor. 2. A retroflexed pregnant uterus with a long cervix, the elongated cervix being mistaken for the whole uterus, and the enlarged uterine body in Douglas's cul-de-sac being taken for the extrauterine sac. 3. Great flaccidity of the abdominal wall and marked thinning of the uterine, giving the impression as if the fetus lay in the free peritoneal cavity.

Time will not permit the full discussion of these at present. I would refer those interested in the matter to my first paper on the differential diagnosis of ectopic pregnancy.

CONCLUSION.

The points I have endeavored to bring out in this communication, and which I would like to have discussed, are: 1. The frequency with which ectopic gestation is diagnosticated as early uterine abortion. 2. The advisability of looking with suspicion upon every case presenting apparently the symptoms of early uterine abortion, and if the case is not running a simple and natural course, to fully anesthetize the patient for a rigid examination and for the proper performance of curettage in the event of uterine abortion being present. 3. If after carrying out this plan there still be some doubt, the advisability of making a posterior vaginal exploratory incision to determine the presence or absence of blood in the peritoneal cavity and to be prepared to open the abdomen if the condition found calls for it. 4. The unreliability of the so-called pathognomonic signs or symptoms of ectopic gestation.

1. Centralblatt f. Gyn., 1881.

I. UNION FOLLOWING PATHOLOGICAL FRACTURE OF THE FEMUR DUE TO SECONDARY CARCINOMA.

II. SPONTANEOUS DISAPPEARANCE OF CARCINOMA OF THE LIP.*

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Spontaneous fractures have long been known to occur occasionally in the presence of carcinomata of various portions of the body. Particularly is this true of the harder varieties of carcinoma of the breast. Too much stress must not be placed, however, upon the older reports, because carcinoma and osteosarcoma were formerly confused under the generic term of "bone cancer."

It is generally admitted that these fractures may be due to metastasis or to abnormal fragility of the bones. The latter does not depend on the presence of carcinoma elements, but upon the development of a more or less general, simple osteoporosis, intimately but obscurely associated with the existence of the primary carcinoma, Richet and Verneuil being inclined to connect the phenomenon with the phosphaturia often existing in the later stages of carcinoma.

The bone most frequently broken is the femur, the humerus coming next, while multiple fractures are sometimes met with.

In spite of the peculiar nature of the accident, union occasionally takes place, and it would perhaps be seen more often if the average duration of life subsequent to the injury were greater.

In cases of simple osteoporosis repair is not infrequent, but it is extremely rare in the presence of secondary carcinoma. Ricard[1] even insists that but one unquestionable instance has been recorded (Küster); while Cornil and Ranvier[2] seem to doubt its occurrence at all. These, however, are extreme views.

Gurlt[3] has collected thirty-eight cases of spontaneous fracture in cancerous individuals—3 men, 35 women—among which were ten instances of union, apparently a remarkably large proportion. But, as Ricard justly remarks, it is impossible to say in how many of these simple fragility existed without the local presence of malignant deposits.

In August, 1897, I examined a well-developed Swedish woman, aged about 35 years. There was a firm carcinomatous nodule of moderate size in the upper outer quadrant of the right breast, which had attracted the patient's attention some six weeks previously. The axillary glands were enlarged and the skin slightly adherent, although the nipple was not sunken. In operating, I removed the entire breast, a considerable portion of the pectoral muscles, including all the fascia, and the entire axillary contents. Union was by first intention.

The growth soon returned locally, although I did not see the patient again until April, 1898. I again operated, removing the remainder of both pectorals and a portion of rib, which appeared to be slightly involved, and skin grafted the large denuded surface.

The patient returned during the following August, about one year from the time of the first operation. There was no local recurrence, but severe pain existed in the dorsolumbar region, and especially over the left kidney posteriorly and the left external surface of the pelvis.

In turning over in bed the left femur broke at the level of the lesser trochanter, producing marked shortening and deformity. There had been no pain or tenderness as low down as this, and nothing to call attention to the process going on within the bone.

Believing the accident to be due to secondary carcinoma, I informed the woman's husband that union would not occur. Merely as a matter of comfort, and for the purpose of relieving deformity, I applied extension to the limb, but did not reexamine it for four weeks, when I was astonished to find firm union.

Shortly after this the woman died, and I was able to secure the upper portion of the broken femur. The fragments were in perfect apposition, and so firmly united that no reasonable amount of force could move them in the slightest. Longitudinal section revealed a central carcinomatous deposit surrounded by a thin, hard shell of bone, which was smooth and of quite uniform thickness. This is not in accord with Volkmann,[3] who says: "A certain amount of union can take place through the formation of periosteal bridges." Gurlt and Stimson also hold the view that repair occurs through the junction of "osseous spicula." Microscopic specimens demonstrated clearly that the tumor had invaded the bone by way of the Haversian canals, leaving numerous small islands of unaltered osseous tissue surrounded by the malignant growth (Fig. 1).

Secondary carcinomata which grow rapidly are manifestly more liable to cause spontaneous fractures, but when these accidents do occur with deposits of slower growth, union is probably more apt to follow. We may likewise assume that, other things being equal, the slower

Figure 1.

the growth the less the pain. There is also no pain in simple osteoporosis. Hence the absence of pain, or its presence in moderate degree only would have some bearing on the prognosis.

We are not justified in believing that the mere presence of the malignant deposit exerts an inhibitory action on the process of ossification. The case just reported would tend to disprove this. We have to assume that the causes of non-union are: 1, death of the patient before new bone has had time to form; 2, extensive destruction of bone; 3, separation of the fragments by growth of the carcinoma between their ends. In this connection there is reason to suppose that tumors develop more rapidly after fracture, owing to decrease of pressure and increase of mechanical irritation.

Some practical deductions from a general consideration of the subject are: 1. Spontaneous fractures may occur during the course of carcinomata, especially those of long-standing in the female breast. 2. They may or may not be due to metastasis. 3. Local pain points toward malignancy, while swelling is of little diagnostic value, as it does not often appear until after the fracture has

* Read before the American Surgical Association, May 3, 1900.

3. See the discussion which followed the lecture delivered by him, in London, Nov. 28, 1900, at a meeting of the Society of Arts.

occurred. 4. However unfavorable the circumstances may seem, we must not be too hasty in affirming that union will not take place, but if it does and if secondary carcinomatous deposit has been the cause of the accident, the fracture will certainly recur if the life of the patient be sufficiently prolonged.

SPONTANEOUS DISAPPEARANCE OF CARCINOMA OF THE LIP.

Cases of spontaneous disappearance of carcinoma are extremely rare, even in the presence of the toxins of erysipelas. As regards the lip, I have been unable to find mention of a single instance; in fact, as Quénu remarks, "The prognosis is grave in all epitheliomata of the mucous surfaces or of the intermediary zones." Fibrous carcinomas of the breast, however, occasionally undergo spontaneous cure, especially in old women (Billroth), and Kaposi[5] asserts that superficial epitheliomata of the skin sometimes heal without treatment. Stoerck reports an epithelioma of the tonsil, which disappeared without interference, although recurrence took place in one year, necessitating resection of the lower jaw. E. Senger[6] claims to have seen certain

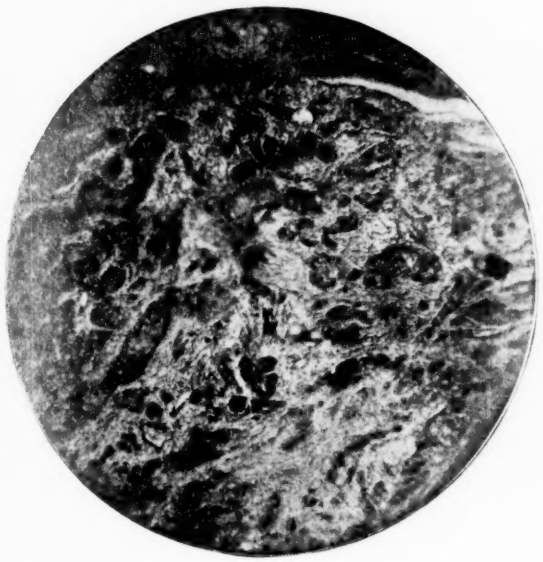

Figure 2.

tumors of the buccal mucous membrane, exhibiting all the microscopic evidences of carcinoma, vanish after the removal of jagged and irritating teeth. He agrees, however, with Gussenbauer, that they were probably not true carcinomata, the clinical evidence being, perhaps, more trustworthy than the microscopic in such cases.

In March, 1899, a man aged 38 years, came under my care in St. Anthony's Hospital, Denver. There was no history nor evidence of syphilis. Three years previously a small, superficial, indurated sore, covered with a crust, appeared on the right half of the lower lip, at the muco-cutaneous junction. It remained about one year, sometimes almost disappearing, and then enlarging to its original size. Occasionally the patient would dislodge the crust with his tongue. No treatment of any kind was employed, and there was no attack of erysipelas, but the ulcer finally disappeared and did not return, leaving a slight, scarcely recognizable scar.

Less than one year later, and nearly two years from the beginning of the disease on the lip, a movable, glandular swelling was noticed in the right submaxillary region. Nine or ten months later this was removed, local recurrence taking place within three weeks. Two weeks later another operation was performed, but the progress of the growth was but temporarily checked.

At the time of my examination a large, inoperable, deeply ulcerated, indurated tumor existed over the right inferior maxilla, the neck, and the side of the face. Microscopic sections revealed a typical epithelioma (Fig. 2). The prolonged administration of the toxins of erysipelas and prodigiosus produced no effect, and death shortly supervened.

I am well aware that microscopic evidence of the carcinomatous nature of the original ulcer of the lip is wanting in this case; but the circumstantial evidence is so strong as to admit of no reasonable doubt.

This anomalous cure might be explained by assuming: 1. Great general resistance to the invasion of carcinoma. We would then have to admit that this resistance was subject to variation at short intervals without apparent cause, or that it was much greater in the lip than in the submaxillary gland. 2. Slight virulence of the epithelioma. Here the hypothesis would be necessary that the virulence varied at different times and in different tissues. 3. The disappearance of some inhibitory product temporarily existing within the body. Which of these suppositions is correct must remain purely problematical.

BIBLIOGRAPHY.

1. Duplay and Reclus: Traité de Chir., 1890, vol. II, p. 389.
2. Shakespeare and Simes: Manual of Path. Hist., 1880, p. 215.
3. Handbuch der Lehre von der Knochenbrüchen, 1862, S. 182.
4. Pitha-Billroth: Handbuch der Allgem. und Spec. Chir., 1882, B. v, S. 475.
5. Path. und Ther. der Hautkrankheiten, 1887, S. 871.
6. Centralbl. f. Chir., No. 30, 1894.

THE RATIONAL USE AND LIMITATIONS OF THERAPEUTIC MEASURES INTENDED TO PROMOTE THE ABSORPTION OF EXUDATES WITHIN THE EYEBALL. MEDICINAL MEASURES.*

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If there has been one branch of ophthalmology which has been neglected in our study and research, it is the general therapeutic measures. I know of only two works on the subject of general therapeutics in relation to the eye, which treat exhaustively—one is a little book called "Ocular Therapeutics," by Ohlemann, the other by Carl Ferdinand Graefe, father of the great Albrecht v. Graefe, and published in 1817. Ohlemann, in his preface says: "Since 1817 when Ferdinand Graefe wrote his 'Repertorium Augenärztlicher Heilmittel.' no attempt has been made to treat the remedial agents used in ophthalmology exhaustively, and to supply a treatise on the subject that might serve as a guide to the practicing physician. This is the more interesting when it is remembered that C. F. Graefe made the assertion that in no branch of therapeutics is the value so worthy of consideration as in ophthalmology."

We are very liable to lose sight of the fact that we are ophthalmic practitioners as well as ophthalmic surgeons, and we are prone to forget the general systemic remedies in our eagerness to use the knife and needle. Granting that general therapeutic measures have a certain usefulness in the cure of diseases in every organ of the body, why have we not given more attention and thought to this very pertinent branch, and some one of the profession in this line of practice directed his energy toward the compilation of an exhaustive text-book on this subject, which to my mind would be a most important adjunct to the literature we have regarding ophthalmology?

We all fully appreciate the dire necessity of administering general therapeutic remedies in certain ocular diseases dependent on causes which the ocular trouble

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is simply a manifestation of, sometimes grave systemic disorder, such as syphilis, tuberculosis, rheumatism, diabetes, etc., and in these troubles we could never hope to bring about resolution unless we resorted to the general therapeutic remedies; so, if this be true in any particular, why should it not be true in the great majority of ocular diseases, especially when it is remembered that here we have to deal with the most sensitive and delicate structure in the whole body, its blood supply being comparatively less than in any other organ; therefore, such blood should be of the purest kind, or laden with such remedies as will bring about the desired results.

It has been a custom for years, in the treatment of ocular diseases, for me to first put my patients under the best hygienic environment possible, and give such general remedies as we would naturally expect to obtain the best results from in so doing. In the consideration of general therapeutic measures intended to promote the absorption of exudates within the eyeball, the field is practically unlimited, and if I were to enumerate all of the different drugs which from time to time have been recommended to promote the absorption of exudates, they would probably fill a good-sized book, and as a "limitation" has been wisely placed on this subject by the Chairman of this Section, who kindly invited me to make this address, I will confine my remarks to those therapeutic agents which in my own experience have proved efficacious. It is entirely unnecessary to begin this subject regarding the fundamental principles of general treatment, as every practitioner of medicine will readily appreciate the reasons for so doing. In cases of severe inflammatory conditions of the eye, it is of paramount importance that the subject should be at rest, and in my estimation we neglect placing patients in bed quite too often. If we made it a rule rather than the exception, I feel sure that better and quicker results would ensue from treatment; not only from the fact of the patient being at rest, but from what this entails, such as avoidance of sunlight and dust, extremes of temperature and other recognized irritants. We must watch symptoms and treat them accordingly, giving attention to the circulatory and respiratory systems, and especially to the secretory and excretory functions, and not only must these be inquired into at the first examination, but they ought to be constantly watched during the whole course of the disease. The old custom of giving an active cathartic in the beginning of all inflammatory troubles is a good one, as there are very few cases in which they are not indicated.

If our patient is suffering from pain and is restless, these conditions should be relieved, as all excitement of whatever nature must be controlled in order to put one in a favorable way toward rapid recovery. Bloodletting is no doubt very beneficial in certain acute inflammatory conditions of the eyes; in acute iritis, for instance, the trouble is very frequently controlled, and the effect of the local instillation of atropin is clearly seen after drawing from two to three ounces of blood from the region of the temple. The method employed is largely a matter of indifference with me; whether the natural leech is used or the artificial one of Heurteloupe, so far as I can determine, is immaterial, the object being depletion of the parts; however, the artificial leech is not so disgusting to most patients, and from this fact alone is preferable. In any event, the patient must be in bed and remain there several hours if any benefit is to be derived from blood-letting. Of all remedies, the so-called alteratives exert a greater influence in the absorption of exudates than any other class of drugs, by increasing nutrition and the constructive metamorphosis, and thus eliminate disease from the tissues. The iodids stand out pre-eminently as the most reliable; that they do promote absorption of inflammatory effusions and inflammatory thickenings is conceded. Iodid of potassium or iodid of sodium is generally given; the latter is usually better assimilated and does not produce the disturbance in the stomach which the potassium will sometimes bring about. The dose to be administered is very important; frequently I have patients who have been referred to me by physicians, and on questioning them in regard to the number of drops taken at home, they tell me they had been taking ten drops three times daily. This is perfectly absurd, because, if we would expect to obtain results from this remedy, the dose must be steadily increased to the point of iodism, and this point can not be reached by giving small doses, as iodid of potash is very rapidly eliminated from the system, unless perchance a patient is met with who has a peculiar idiosyncrasy in this respect. It is not an uncommon thing to give as much as 200 drops of a saturated solution of iodid of potassium three times daily at Hot Springs; of course, in conjunction with the hot baths larger doses can be borne here than elsewhere, but 1 to 2 drams can be taken at a dose without the baths and no bad effects be seen. It has been my experience to see exudates disappear time after time under the larger doses, when the smaller had no appreciable effect. It is necessary to give some form of mercury, in fact it is a routine practice with me to begin treatment with inunctions, and after a thorough course has been given the iodids are then administered. It is not the rule usually to give mercury, especially in tertiary syphilis, but my experience has taught me to rely on this remedy in all such cases, as better results are obtained after a thorough course of inunctions, and I consider mercury a very important factor in the absorption of exudates. One dram is rubbed into the skin each day, and this is continued until the point of ptyalism is reached, or, which is more important, the hemoglobin is decreased. Neuman, Nothnagel and others have demonstrated the effects of mercury on the blood, both in small and tonic doses, and in the larger ones. They showed that mercury in small doses increased the hemoglobin, but in large doses long continued it decreased this important element, hence was detrimental; therefore, it behooves us to use the microscope and be on guard lest we produce some serious trouble in the kidneys, as it has also been demonstrated that after long-continued use of mercury, casts are found in the urine, to disappear after the remedy is discontinued. When it is given by inunction, it does not have to pass through the portals of the liver and more readily reaches every tissue and organ through the white blood cells. Generally speaking, inunctions for three or four weeks in moderate daily doses carry the patient to the top of the hemoglobin hill, and everything beyond is hurtful. The blood should be examined at the beginning of a mercurial course, as well as the urine, and these ought to be watched during the whole time.

Mercury and the iodids are not alone beneficial in removing exudates caused by syphilis, but in many other etiologic conditions, so in these two remedies we have the sheet-anchor. Among the diaphoretics used to promote the absorption of exudates, probably pilocarpin has first place, as it will unquestionably produce profuse diaphoresis, and by so acting effusions are more readily absorbed; especially is this true if the patient will abstain as far as possible from liquids, not only during

the time the sweating process is in operation, but for hours afterward. Taken in ¼-grain doses hypodermically, the effects are quickly seen; it is in those cases where prompt action is necessary that this drug is strongly indicated. The patient should be placed in bed before the injection is given, with woolen blankets under and over him to get the best results from this remedy, as the sweating process is thereby prolonged.

Salicylate of sodium is another remedy of marked virtue in the absorption of exudates, especially in cases of rheumatic origin or uric-acid diathesis. Thirty grains well diluted in water every four hours acts well in many cases. If one of the digestive ferments, such as pepsin, is given along with the salicylate, the distressing stomach disturbance often seen after large and continued doses of this drug will be greatly obviated. Aminoform is a remedy that I have recently used as a substitute for salicylate of sodium, as it was claimed that it did not produce the stomach disorder which large and continued doses of salicylic acid would bring about. It is soluble in water and is given in 10-grain doses every four hours. I have found it very beneficial in rheumatic iritis; it not only relieves the inflammatory condition, but also the pain which usually accompanies it.

In hydrotherapy we have the most valuable adjunct to the administration of internal remedies. The absorption of exudates is brought about through elimination, and certainly in hot baths this is shown most beautifully. The method employed at Hot Springs, in giving the baths and remedies, I believe to be superior to those of continental Europe, so I shall therefore give the routine way of prescribing them at Hot Springs. The natural heat of the waters from different springs ranges in temperature from 96 to 157 degrees F., so it is necessary to temper the hot water with water which the night before has been allowed to run into a "cold water" tank from the springs, and is therefore cold. The temperature of the baths is usually about 98 F., but if active diaphoresis is desired the temperature is sometimes increased to 102 F. The patient stays in the tub ten minutes, and during this time drinks two or three cupfuls of hot water. I may say that the bath-houses are so constructed and equipped that it is almost imposible for one to "catch cold" after the bath has been taken, as there are a series of rooms kept at different temperatures, the patient being taken from the tub to a temperature which is the same as the bath, or in case profuse sweating is desired, to a warmer room, and then to a cooler one, until finally he is in the same temperature as on the outside. After coming from the tub, an attendant with crash towels rubs him thoroughly, a bath-robe is placed around him and then he lies down on a wicker couch fifteen minutes or more with bath-robe and heavy towels over him, to go through the sweating process.

The place wherein the bath is taken constitutes a very important element, as it has frequently been my experience to see patients who have taken the baths in their rooms at the hotels with the same water, but under different conditions from the regular bath-houses, not do so well until a change has been made to the latter. When it is not possible for one to avail himself of the opportunity of taking the baths as just described, a special steam-heat apparatus has been devised for producing diaphoresis, but as I have had no experience with this method, I will not go into details; however, with proper precautions and surroundings I believe it to be reliable.

If mercury is indicated during the course of baths, it is rubbed into the skin each day after the patient has taken the bath. This is done by a trained attendant, who, with rubber gloves to protect his hands, continues to rub until the mercury is thoroughly absorbed by the skin. The patient is not allowed to perspire freely during the course of mercury, only enough to keep the pores of the skin open for the reception of the drug. After the course has been completed, the patient is given vapor baths for a few days to eliminate any excess of mercury which may be in the system; he is then ready for the course of iodids, taking the baths usually through the entire course. It is better to have the inunctions administered by a trained attendant, as experience shows that the patient will not as a rule devote the proper time and attention to the rubbing.

In the internal administration of mineral waters to produce the absorption of exudates, I have had little experience, as usually the methods already described have been satisfactory. It is a question in my mind whether they exert their usefulness through any mineral properties they may contain, or whether it is in the great quantity of water taken into the system which will necessarily stimulate elimination.

The limitation of therapeutic remedies used to promote the absorption of exudates is very circumscribed in a way, and after all has been said, alteratives, mercury and iodids, pilocarpin, salicylate of sodium and the hot baths constitute about the whole number of remedies on which we can place much reliance. Exudates of specific and uric acid origin can without question be controlled, but in other cases we are frequently disappointed, do what we may in the case.

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SUPPURATING MASTOIDITIS, WITH THE REPORT OF CASES.

SUPPURATING OTITIS MEDIA, BOTH EARS; SUPPURATING MASTOIDITIS ON THE RIGHT SIDE, ABSCESS EXTENDING INTO THE DEEPER TISSUES OF THE NECK, AND EXTRADURAL ABSCESS.

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The following cases represent some of the various forms of mastoiditis resulting from epidemic influenza, and are instructive as they do not all present the uniform indications for operation.

CASE I.—I saw this patient, a boy 6 years of age, May 1, 1897, in consultation with his family physician, Dr. G. L. Magruder, who gave me the history of a case of suppurating otitis media in both ears, resulting from epidemic influenza. The little patient was extremely emaciated, with a small and feeble pulse; there was a profuse purulent discharge from both external auditory canals, and over the right mastoid region, extending back toward the occiput and downward into the neck for several inches, there was a large boggy swelling, very sensitive to pressure; the right auricle was also very prominent. There were no brain symptoms, as far as could be ascertained. An operation having been decided on, the following morning, May 2, the child was etherized, and the head shaved in the region of the operation; an incision was then made in the swelling, commencing just above the auricle, and extending downward some distance on the neck. Following the free incision there was a profuse discharge of pus, which was found to be flowing from a fistulous opening in the upper part of the mastoid bone, the whole outer layer of which was in a highly necrosed state. This was removed with the chisel and gouge, and it was then discovered that the whole mastoid

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process was badly diseased. The pus, finding a second exit through a large fistulous opening in the tip of the process, had burrowed its way into the deeper structures of the neck.

With a sharp curette all the diseased bone that could be felt was removed, and in so doing the lateral sinus was exposed to nearly its full extent; but as it was soft to the touch it was decided not to make an exploration of it. In working upward, a collection of pus was discovered between the dura mater and the roof of the mastoid antrum, and, after a complete removal of all diseased bone in this region, the dura mater was found to have been exposed from 1½ to 2 inches. The wound was thoroughly cleansed with a solution of bichlorid of mercury, 1 to 3000, and packed with iodoform gauze.

Before operation the thermometer by the axilla registered 99.4; after the operation, by the mouth, 103.2. The patient rested well during the night.

May 3, at 8 a.m., the temperature was 98.4; 12 m., 102.5; 8 p.m., 103. No record of the pulse could be kept, owing to the extreme irritability of the patient. He rested fairly well during the day, and did not complain of pain.

May 4, at 8 a.m., the temperature was 102; 12 m., 102.2; 6 p.m., 103.4. The patient was extremely restless during the day.

May 5, with Dr. Keen in consultation, the dressings were removed and a thorough exploration of the wound was made. There was some further diseased condition of the bone discovered and this was removed. The wound in the neck was further extended to within two inches of the clavicle. Although no further purulent collection was found, the tissues themselves were in a sloughing state; this was scraped away as thoroughly as possible, and the wound packed with iodoform gauze. Owing to the left mastoid process showing some redness and tenderness on pressure, a free incision was made back of the auricle, through the periosteum, and the antrum opened, but nothing beyond a high degree of congestion was observed, and the wound was then closed. At 8 p.m. the temperature was 105, and he was slightly delirious.

May 6, reports showed he had slept very little during the night. At 8 a.m. his temperature was 104.3; 12 m., 104.2; 8 p.m., 103.2.

May 7, at 8 a.m., the temperature was 103.3; 12 m., 103; 8 p.m., 103.4. There was little or no change in the patient's general condition.

May 8, at 8 a.m., the temperature was 100.4; 12 m., 100.4; 8 p.m., 101.4. The wound was dressed, and showed a decided improvement.

May 9, at 8 a.m., the temperature was 100.2; 12 m., 100.2; 8 p.m., 100.4. The patient was very much stronger and less restless.

May 10, at 8 a.m., his temperature was 99.4; 12 m., 100.1; 8 p.m., 100.4. The wound was dressed, the slough coming away in small pieces.

May 16, the slough having been detached in large masses, a healing granulating surface was left. The patient was etherized, the edges of the wound in the neck freshened and united by means of eight sutures. Good union was obtained, except for an inch of the upper portion of the wound, which was broken open by the constant movement of the child's head. The rest of the wound continued to be dressed every third or fourth day with iodoform gauze, and in the course of a few weeks gradually closed.

This patient made a slow convalescence, but finally made a good recovery, and is now in robust health, with good hearing for the voice and watch.

ACUTE SUPPURATING OTITIS MEDIA, SUPPURATING MASTOIDITIS.

CASE 2.—Alice, aged 4 years, was seen by me on Nov. 21, 1899. Her family physician stated that after an attack of influenza an abscess developed in the right ear. This was quite persistent, and did not yield to treatment. In the course of three or four weeks the mastoid commenced to show signs of being involved.

When first seen by me there was a profuse purulent discharge from the right external auditory canal. The mastoid was only moderately swollen, but quite tender on firm pressure. There was no elevation of temperature.

The patient was admitted to the Episcopal Eye, Ear and Throat Hospital, and on the following day the mastoid was opened. After detaching the periosteum the cortex immediately over the antrum showed signs of softening, while that over the remainder of the process was firm. The antrum was opened with a chisel, and was found filled with pus. The probe revealed an advanced state of caries, both toward the aditus, and in the cells as far as its tip. The cortex was removed as far as the tip of the process, and all diseased bone scraped away with the curette. The cavity was packed with iodoform gauze, which was carried well up toward the tympanum.

This patient made a rapid and uninterrupted recovery, and was discharged from the hospital at the end of the third week, cured.

ACUTE SUPPURATING OTITIS MEDIA.

CASE 3.—Eva A., white, aged 8 years, was admitted to the Episcopal Eye, Ear and Throat Hospital Jan. 1, 1899, giving a history of an acute suppurating otitis media on the left side, of three weeks duration, following an attack of influenza. No clear idea could be obtained as to the form of treatment adopted before entering the hospital, except that the physician had prescribed drops for the ear.

On admission the child was very much emaciated, exceedingly nervous, and with a temperature of 100 degrees.

On examination there was observed a profuse purulent discharge from the left external auditory canal; no swelling over the mastoid, but from about the tip of the process extending down into the neck there was a swelling about the size of a pigeon's egg, very painful to the touch. There was little or no sensitiveness over the mastoid process. After preparing the parts for operation, the child was placed under ether, and an incision, commencing just above the auricle, was carried down over the mastoid process into the swelling in the neck, in doing this a large quantity of pus was evacuated. After detaching the periosteum from the mastoid process, the cortex portion was found to be in a healthy condition; a curved probe, however, could be introduced at the tip of the process, and carried some distance upward. The antrum was then opened, found filled with pus, and, with the rongeur, the cortex as far as the tip was removed, revealing an entire breaking down of the mastoid cells, the pus finding an exit into the tissues of the neck through the very thin walls of the cell in the tip of the process. Caries was found to have extended upward for some distance, as well as toward the tympanic cavity. This was very thoroughly removed with a sharp spoon, and the cavity packed with iodoform gauze.

The temperature for several days ranged from 100 to 101, after which it fell to 99.4, but the slightest excitement would cause it to rise.

The subsequent dressings were conducted with some difficulty, owing to the exceedingly nervous condition of the child, but she finally made a complete recovery, and was discharged from the hospital at the end of the sixth week, with the wound completely healed.

CHRONIC SUPPURATING OTITIS MEDIA, SUPPURATING MASTOIDITIS.

CASE 4.—Bessie M., white, aged 13, on admission to the hospital, gave a history of a chronic purulent discharge from the right ear, of several years' duration. During a recent attack of influenza the discharge was greatly increased, and at the same time there was considerable swelling and tenderness over the mastoid process. There was also marked cerebral irritation, manifested by delirium, which passed off with the subsidence of the attack of influenza.

On examination, quite a profuse discharge from the right external auditory canal was observed coming through a large perforation in the posterior inferior quadrant of the membrana tympani. There was no pain over the mastoid, but she suffered from headaches referred to the right temporal region. On firm pressure over the mastoid there was slight pitting. Temperature was 99.2 F.

The patient was prepared for operation, and, on the day following her admission to the hospital, the mastoid was opened in the usual manner. The antrum was found filled with pus and granulation tissue. The caries, which was exten-

sive in this region, did not involve the lower mastoid cells, but extended upward and toward the middle ear cavity. This was completely removed with a sharp spoon, and the cavity packed with iodoform gauze. The day following the operation the temperature rose to 100, but dropped to normal on the following day, and remained so during the patient's convalescence.

This patient made a rapid recovery, and was discharged from the hospital in two weeks, cured.

SUPPURATING OTITIS MEDIA, SUPPURATING MASTOIDITIS.

CASE 5.—R. L. T., white, aged 24, consulted me on April 20, 1899, complaining of a suppurating otitis media on the right side, of six weeks' duration, following an attack of influenza.

On examination, a profuse creamy purulent secretion was observed, coming from the right external auditory canal; this, when cleared away, was observed to come through a perforation in the anterior inferior quadrant of the membrana tympani. This membrane was very much swollen and congested. The upper and posterior wall of the canal bulged somewhat. There was no swelling, and no pain over the mastoid process, except a very slight sensitiveness on firm pressure over the tip; but no more pain than was caused by the same amount of pressure on the tip of the corresponding mastoid process. The temperature was 100.

The patient was admitted to the Episcopal Eye, Ear and Throat Hospital the same day. Not being quite sure as to any mastoid involvement, he was kept under observation. On the second day after admission the temperature rose to 101.3, with little or no tenderness on pressure, and no swelling of the mastoid. He, however, complained of severe headache referred to the right temporal region. Believing there was an abscess in the mastoid process, he was prepared for operation, which was done on the following day.

On stripping the bone of its periosteum, the cortex was found in a healthy condition, but as soon as the antrum was opened pus flowed most profusely from the opening. This continued to flow for some minutes, without any diminution, but it finally gave way to a severe hemorrhagic flow, and it was only after the continued use of hot applications that this could be checked. As soon as this was done, however, the opening was enlarged, and the whole mastoid process was found to be one large pus cavity. The cortical portion was removed as far as the tip, and all caries, which was also found extending into the tympanum, was scraped away. In doing so the lateral sinus was exposed to nearly its full extent, but was found intact and in good condition. The middle ear and mastoid cavities were irrigated with a solution of bichlorid of mercury, 1 to 3000, and packed with iodoform gauze. His temperature on the evening of the operation fell to 98 F., and during his convalescence ranged from 98.4 to 99.4.

This patient was discharged from the hospital at the end of the third week, with the mastoid wound not quite healed, but otherwise well, and with normal hearing.

In selecting these cases from my service in the Episcopal Eye, Ear and Throat Hospital, it was with the view of presenting different phases of mastoid disease complicating epidemic influenza, and with the hope that they might elicit some discussion that would enable us to formulate some definite rules which will enable us to decide when to operate.

Depopulation of India.—Since 1896 it is estimated that five millions have died in India from causes due to the famine. In western India matters are far worse. The latest advices from Simla say the census returns of the central provinces show a decrease of over a million since 1891, when an increase of a million and a half might have been expected. The Oodeypoor State returns show a decrease of 840,000 or 45 per cent. of the population: the State of Bhopaul shows a decrease of 808,000: the District of Banda a decrease of 124,000, and soon in Bombay City the population will have diminished by 50,000. The localities which have escaped the plague show a satisfactory though uncompensating increase. Madras, for instance, has gained 8 per cent. over 1891.

REMARKS ON THE AFTER-EFFECTS OF OPERATIONS FOR THE REMOVAL OF ADENOID TISSUE AT THE VAULT OF THE PHARYNX.*

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In view of the great frequency of operations for the removal of adenoids from the nasopharynx, it is a little surprising that serious accidents or sequences are not more often heard of. For this reason it might seem superfluous to the philosopher for any one to attempt the awakening of apprehension over so simple and safe a surgical procedure as this one; still, it is not by any means entirely devoid of grave complications. Having met with a few cases where the operation was followed by troublesome results, it will not be amiss to bring the subject before the Section for discussion.

Classification.—For convenience of consideration, cases of adenoids or lymphoid hypertrophy at the vault of the pharynx may be classified as: simple, or those cases presenting enlargement or overgrowth of the lymphoid tissue at the vault of the pharynx only; and, complex, or those cases in which the enlargement is either dense or encapsulated and accompanied by hypertrophy of the faucial tonsils, the peritonsillar tissue and possibly the turbinated bodies. The untoward effects of removal of adenoids—either with the curette or forceps—may be classified as immediate and remote. The immediate effects may be considered as: hemorrhage; injury to pharynx; reactionary acute inflammation affecting the pharynx, larynx and tonsils, ear, accessory cavities; and sepsis.

Among the remote effects may be considered subacute disease of the pharynx, chronic diseases of the ear, diseases of the accessory sinuses, and tuberculosis.

Hemorrhage.—This, to an alarming extent, is not frequently encountered, excepting in hemophilia; nevertheless, there are several cases of fatal hemorrhage on record. There are but few reliable premonitory signs. Among them may be mentioned a highly vascular and villous character of the overgrowth and a cachectic or scorbutic appearance of the patient. Sometimes, however, a very smart hemorrhage may follow the evulsion of a hard lobulated mass of adenoids. Whenever suspicious indications are present the growths should be removed by means of the galvano-cautery loop applied at a red heat.

Effects.—Unnecessary injury to the nasopharynx or Eustachian tubes may be produced by either a badly-adapted curette or the exercise of too much force. Cutting forceps, as well as the curette, may be made to produce similar results. Unusual reactionary inflammation, however, of the parts operated on, and also of neighboring regions, such as the middle ear, faucial tonsils, accessory cavities and larynx may occur under the best management. The writer has met with several unfortunate occurrences of this sort which could not be properly accounted for. In one case the operation was followed by a very severe peritonsillitis, and, in another, "a run" of facial erysipelas. In each of these cases the ordinary antiseptic precautions were taken, and the subjects were apparently in good condition. The writer saw two cases, in consultation, of severe peritonsillitis following adenoid operations in patients who were suf-

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fering at the time from gonorrhea, and one case of severe laryngitis following curettement. More than ordinary reactionary inflammation is likely to follow all such operations if the patients are just recovering from influenza, diphtheria or the exanthemata. Indeed, it has been pointed out, by many writers, that these operations should be avoided during the prevalence of influenza, diphtheria and other epidemic infectious diseases. Inflammation of the middle ear and accessory sinuses may follow these operations. Such unfortunate circumstances, however, usually pass off in a few days, but may remain as subacute catarrhal inflammations or terminate in purulent inflammation. A few cases of general sepsis following these operations are recorded, but, happily, not many. The writer has seen one case, with meningeal symptoms, which terminated fatally. Among the remote effects sometimes ascribed to adenoid operations are subacute and chronic inflammation of the middle ear or accessory sinuses. The middle ear, however, suffers much more frequently than the other regions mentioned. Inflammation of the middle ear, under some circumstances, will follow the operation, notwithstanding great care in the manipulation. The general supposition is that these untoward effects are always due to a lack of antiseptic precautions, such as improper cleansing of the nasopharynx and incomplete sterilization of the instruments used. I think, however, that this criticism in many instances is unjust, for I have met with cases of this sort where every possible preliminary antiseptic precaution has been taken. A few cases have been reported of chorea and other neurotic affections having followed these operations in weakly children. The writer has never met with any such instance and is inclined to regard the appearance of such affections at such a time as merely coincidental. Much has been written concerning the induction of tuberculosis of the nasopharynx, and tuberculous adenopathies, by adenoid operations. Several well-authenticated cases in Europe and in this country have been reported. The writer, however, has never met with a case excepting in subjects who were some time previously tuberculous. Undoubtedly this danger has been very much overrated, judging from the very few well-established cases reported. One can easily understand that an operation of this sort, upon a tuberculous child, may lead to an outbreak of the disease in the nasopharynx, or in its vicinity. It seems unnecessary, however, to add that a practitioner of good judgment would hesitate to remove adenoids in such a patient unless the necessity were very pressing, and, when such is the case, it is obvious that the galvanocautery should be selected in preference to the curette or the forceps. With the complicated cases—such as those attended by hypertrophy of the surrounding lymphoid tissues and turbinates, the question often arises as to whether all of this tissue should be operated on at once or by successive stages. In the writer's experience the reactionary inflammation can, as a rule, be measured by the extent of the wounded tissue. It seems to me that it may be laid down as a rule that much more trouble may be expected after an operation including the removal of the adenoids, faucial tonsils and peritonsillar tissue at once, than if only one of these regions be operated on at a time. Notwithstanding this, if the subject be healthy and the surrounding circumstances favorable, there can be no serious objection to clearing out the whole obstruction to the pharynx in the majority of instances. Regarding the regrowth of adenoids, the consensus of opinion seems to be that regrowth seldom takes place when the tissue has been thoroughly removed. The writer, however, has met with three instances of such an event after thorough removal of the hypertrophied tissue at the vault of the pharynx. This experience coincides with that of several other laryngologists, and is a point which certainly deserves attention.

MEDICAL TREATMENT OF ACTINOMYCOSIS.

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In presenting the following cases of actinomycosis I have selected, with one exception, only those in which I have been able to verify the diagnosis with the microscope. My chief object in reporting them is to call the attention of the profession: 1, to the frequency of the disease, especially in agricultural communities; 2, to direct attention to a mode of treatment that has proved very satisfactory in all the cases coming under my observation for the past two years:

CASE 1.—Mrs. D., aged 29, a farmer's wife; had good health prior to her present illness, but for two years hard lumps or swellings had from time to time appeared about the lower jaw. Four times the swellings had been incised and cleaned out with a sharp spoon. After this procedure the disease would be quiescent for a month or two, and then the swellings would recur.

At the time I was called to see her, Aug. 24, 1898, she was very much emaciated, with marked pallor. The lungs, heart, liver, spleen and kidneys were normal except for polyuria; her appetite was poor, there was constipation, and she was seven months advanced in pregnancy, and troubled with insomnia. She presented an enormous swelling of the right side of the face. A sinus that would admit the little finger led down to a piece of nickel-sized, denuded bone of the lower jaw. The sinus was lined with ill-nourished granulations, and discharged a thin whitish pus. The surrounding tissues were very firm, almost bony hard; surrounding the area of hardness and gradually shading off was a zone of edema, involving the temple, right cheek, upper and lower lips to the median line. Trismus was marked; she could scarcely separate the teeth.

During the week before my visit the swelling had been very painful, the pain being so intense as to prevent her sleeping for three or four nights. Prior to that time she had suffered comparatively little pain. The second lower right molar was carious. The temperature was 101.

I directed that the sinuses be washed out with peroxid of hydrogen, followed by Lugol's solution. Internally I gave iodid of potash grains v, four times daily, with laxatives, and began the injection of 15 minims of a 1 per cent. solution of iodid of potash into the tissues. The effect was very striking. Three days after the first injection the swelling had subsided, the pain had almost entirely disappeared and the temperature had fallen to the normal; it never went above 99 degrees during the subsequent course of the disease.

The patient reported that in a few hours after the injection there was an increase in the swelling, but it began to decline after twelve hours, and at the time of my visit, three days after the hypodermic, the swelling was decidedly less than at my previous one. I mention this because I have since found it a constant manifestation following the injections, i. e., a temporary increase in the swelling, reaching its acme in about six hours, remaining stationary for about six hours, and beginning to subside in twelve. By the end of the third day the swelling had disappeared, with a decided decrease of the original swelling.

Her subsequent recovery was rapid and uneventful, except for iodism, which appeared in March, 1899. She had been taking 15 grains of iodid four times daily and had been given hypodermics every three or four days during October and

November, every six days during December, three times in January, and three times in February, 1899.

By March 1 the swelling and induration had almost entirely disappeared, and the trismus was gone. I left off the iodid and the symptoms of iodism quickly disappeared. July 29, Aug. 12, and Sept. 15 I gave her hypodermics to clear away the last vestiges of the swelling and induration. The patient had in all forty one hypodermic injections.

I neglected to state that she was delivered Oct. 23, 1898, after a normal labor which was followed by a perfectly normal puerperium. The urine, low in specific gravity, showed some albumin all through September, but this disappeared by November, 1898, and the specific gravity returned to the normal. This patient has presented herself for examination several times since the last-named visit, but has never at any time shown any evidence of the disease. A noticeable feature of the case has been the improvement in the scarring; from a large, depressed, adherent scar, the case now presents a movable, scarcely noticeable one. The general health is excellent, with no vestige of the local trouble.

CASE 2.—N. R., a male, aged 28, came to my office March 18, 1899, for examination and operation. His general health had always been good. For two years he had had a sinus 2½ inches in length running horizontally beneath the skin, just above the hyoid bone, discharging a thin white pus; the surrounding tissues indurated. The pus showed the ray-fungus under the microscope, as did also the granulations. The internal organs and urine were normal. I advised iodid of potash internally and hypodermically, and injected the sinus with peroxid of hydrogen, followed by Lugol's solution.

The patient declined treatment, as he expected to be married in two weeks, and insisted on an operation. I opened the sinus, curetted thoroughly, cut away all suspicious tissue with the scissors, covered up the wound by sliding the skin, put in a silk thread drain and dressed it antiseptically. I removed the drain on the third day, injected the wound with a 1 per cent. solution of iodid every day, and began the administration of iodid of potash internally. The wound healed perfectly and promptly, much to my surprise, as experience has taught me that these old sinuses about the neck rarely heal up promptly; by March 28 it was entirely healed. He continued the iodid for two months. A recent letter from him says he is well, with no evidences of the trouble.

CASE 3.—A. B. N., aged 63, a farmer, consulted me first on June 26, 1899. His previous health had been good. Sept. 1, 1898, he was sitting on a board fence with his thumb-nail resting on the top board. A neighbor came along and rudely jerked his hand, tearing the nail off. During the autumn months he gathered his corn with the thumb imperfectly protected, and was also at this time treating a lumpy-jawed cow. The ungual phalanx of the left thumb was very much enlarged, hard, and ulceration over the matrix of the nail. As I picked up his hand to examine it my eye lighted on a sulphur-yellow granule in one of the granulations. I removed it, and under the microscope it showed the ray-fungus.

I put him on iodid of potash and gave him peroxid and Lugol's solution for a wash, to be used twice daily, and directed the wound covered with borated gauze. I administered, hypodermically, a 1 per cent. solution of iodid of potash every third or fourth day. The secondary swelling following the hypodermic administration of the iodid was so painful that after two weeks he insisted on an operation, and I amputated the thumb. The subsequent course was uneventful, and there has been no recurrence. My mistake in the case was, I believe, in giving 15 minims of the solution; if I had only given 5 minims every third day I feel that the hypodermic medication might have been more satisfactory.

CASE 4.—F. M., aged 70 years, an attorney, suffering from diabetes mellitus, frequently picked his teeth with a straw. He consulted me first in June, 1899. He had noticed a swelling the size of a hazlenut on the lower jaw two months before, and had consulted a dentist, who said his trouble was dependent on an improperly filled tooth; he removed the filling, but was unable to detect anything wrong with the tooth or establish any connection between the tooth and the swelling. I found a hard, firm filbert-sized swelling on the outer aspect of the lower jaw, corresponding to the lower, left, first molar tooth. I incised the swelling and found a small collection of pus, thin, whitish, containing whitish-yellow granules. The microscope showed actinomyces. I cleaned out the abscess cavity with peroxid of hydrogen, swabbed it out with tincture of iodin and packed it with iodoform gauze, treating it daily for two weeks, every other day for four weeks. Recovery was gradual, but apparently perfect, at the end of two months.

CASE 5.—I was called to see A. H., a farmer and stock feeder, aged 53, on June 14, 1899, Dr. Clearwater in attendance. Prior to this illness his general health had been good. For one year he had been annoyed by a dry, irritating cough, with no expectoration, and during the preceding three years had frequently assisted in the treatment of big-jawed cattle. For four days prior to my visit he had suffered from headache, malaise, slight febrile movement, dyspnea and aggravated cough. Two days after the onset of his illness, after a violent paroxysm of coughing, he felt something in his throat that he thought was a piece of timothy straw. Its presence occasioned a choking sensation, and he thought he swallowed it. Following this paroxysm he began expectorating blood-stained pus with a very offensive odor. He would be attacked by a violent paroxysm of coughing, after which he would expectorate freely.

At the time I saw him he was pale, his pupils dilated, his voice feeble, although the patient was about the house. Anteriorily, on the right side, there was an area of dullness, a finger's breadth out from the sternum, reaching from the first intercostal space to the third rib, and shading off laterally. The resistance to the finger was marked. Bronchial breathing, and large and small mucous râles were present. Posteriorly, there was a corresponding area in the right interscapular region, with similar physical signs, the axillary region dull in the upper part; aside from the above-described area and an occasional râle, the lungs were free. The heart was slightly dilated, the sounds normal. The liver and spleen were normal. The urine had a specific gravity of 1022 and was acid, with a trace of albumin, indican, granular casts, uric acid and wide mycelial threads with clubbed ends. The albumin increased until September, then began to decline. Indican was usually present in small amounts. Casts were found until the middle of September, when they disappeared. The mycelial threads with clubbed ends were prominently present until the last week in August. I introduce this detail because of the continued presence of this unusual vegetable organism in the urine.

Nothing was to be found in the mouth or throat, and no carious teeth The temperature was 100.5 F., the pulse 96. The patient was expectorating a very offensive purulent matter, made up macroscopically of gray, grayish to yellow and black expectorate. Insomnia and anorexia were marked symptoms. The anorexia was due to the foul taste left by the expectorate.

I was impressed by the comparatively low temperature, the macroscopic appearance of the sputum, the circumscribed, marked resistance, and the history of the suspected piece of timothy straw, and advanced the diagnosis of abscess of the right lung, from a foreign body lodged in the right bronchus, with secondary peribronchitis, and gave as my opinion that there was an actinomycotic infection. Later I was able to demonstrate with the microscope the presence of the ray-fungus in the sputum, and verify it by repeated subsequent examinations.

I ordered iodid of potash, 5 grains every four hours, alternately with capsules containing quinin and salicin, had iodin vaporized constantly in his room, and every three hours had him inhale a mixture containing creosote and oil of eucalyptus.

He ran along with aggravation of his symptoms coincident with the formation of pus in a new focus, and a decline of symptoms with the escape of pus, but his symptoms growing graver and general condition worse as time went by. His weight had declined from 150 to 105 pounds, with increased feebleness, pulse below 100 during June, from 100 to 120 during July, and during the last week in July never below 114.

The temperature was progressively higher, ranging in June from 99 to 101 degrees; in July from 99.5 to 102, occasionaly 103.5 degrees. August 10 I began the injection of a 1 per cent. solution of iodid of potash, one-half dram every third day, in addition to the other treatment.

He had refused this treatment up to this time, and only consented to it because he believed there could be but one result, viz., speedy death, unless something stopped the course of the disease. The area of dulness in the right lung had increased, and pleuritic sounds were to be heard over this area. An area of dulness could be detected posteriorly on the left side, corresponding in location to that on the right. So desperate was his condition that Dr. Matthews, of Chicago, who saw him with me, and confirmed the diagnosis, said that he would die in one week; an opinion that was concurred in by Dr. E. T. Hall, the physician in charge, and myself.

We made the injection with a large hypodermic exploring syringe, after preparing the surface with scrupulous care to avoid pus infection. After determining the point of greatest dulness, we introduced the needle detached from the syringe; if blood flowed freely through it—or if the patient expectorated freely of blood, as he did on several occasions—we would withdraw the needle and reintroduce it (a little precaution that I have found useful in injecting the thyroid). We never injected more than one-half to 1 dram, for we feared the traumatism to the tissues from the distension might result disastrously.

The result of this change, or rather addition to the treatment, was very striking. In three days his strength and general appearance had improved. After the second injection his temperature never went above 101 and his pulse 104. He was given, in all, twenty-five injections. After each there would be a temporary increase of dyspnea, cough and temperature for six hours, followed by marked improvement after twelve hours. Three days after the physical signs would be noticeably improved. The area of dulness on the left side described, disappeared after the third injection into it.

In October he presented himself at my office with dulness on the right side in front. The lungs were clear posteriorly. He was anxious to leave off the injections, in fact he had not had one for two weeks. I directed him to return home and resume them. He had two anteriorly at intervals of three days, and each contained one-half dram. Twelve hours after the second injection the irritation of the right lung left him "as if by magic"—his own words—and he has never had any cough or expectoration since.

Dec. 15, 1899, his weight was 165 pounds. He was well nourished, with no cough nor expectoration, and no pulmonary dulness nor râles were present. His heart, liver, spleen and temperature were normal, his pulse 72. I have had occasion to examine him several times since December, 1899, and have never been able to detect any evidences of the disease.

I take this opportunity to thank Dr. E. T. Hall, of Plano, Iowa, for his valuable assistance in the care and reporting of this case.

CASE 6.—I was called to see T. P., aged 30, a conductor on a freight train, March 4, 1900, Dr. Severs in charge. His previous health had been good. One month before, the lower right wisdom tooth, carious for some time, began to ache, and he had it extracted. Almost immediately he was seized with a most exeruciating pain, which was relieved after several hours by heroic doses of morphin.

The jaw swelled very rapidly, increasing until it became enormous; but, after the first few hours, the pain was moderate. The temperature varied from 100 to 102 degrees. The swelling had been incised at four different times, giving vent to small accumulations of pus. The second, and later the first molar on the right side, were erupted by granulation tissue.

At the first time I saw him he was emaciated, with prostration marked, and he was confined to his bed, taking very little nourishment and presenting an enormous swelling of the right side of the face, especially the lower jaw, with two sinuses leading down to the bone, the one admitting a lead pencil, the other the index finger, both filled and pouting with granulations and discharging a thin whitish pus containing whitish-yellow granules. Trismus was marked. From the second lower biscupid, rearward, the alveolar process exhibited a fungous mass of granulations, discharging the same character of pus. The swelling over the jaw was stony hard, and surrounded by a zone of edematous swelling that partially closed the right eye, puffed out the cheek, thickened the lips and extended on the lower jaw to the median line.

There was numbness on the distal or anterior side, and the circulation was interfered with, as evidenced by the slow return of blood when it was driven out by pressure. There was no glandular involvement. I made a diagnosis of actinomycosis, based on the history, symptoms and clinical picture, and was able to verify it by finding the ray-fungus in the pus. His temperature was 100.5, pulse 114, the lungs, heart, liver and spleen normal. The urine, whose specific gravity was 1018, was acid, with no albumin, but phosphates in excess and with wide mycelial threads with enlarged rounded ends like those found in Case 5. I put him on iodid of potash every four hours, ordered the sinuses syringed out with peroxid of hydrogen followed by 50 per cent. Lugol's solution, and covered with borated gauze; the mouth washed every two hours. Hypodermically I administered 15 minims of a 1 per cent. solution of iodid of potash directly into the infiltrated tissues. At first I pushed the hypodermic medication, administering it daily, and injecting at three or four points, but the sequent swelling, described previously, deterred me, and I finally settled down to injections every third day. I was especially anxious to push treatment in this case because I feared the opening in the mouth might lead to the invasion of the internal organs.

Progress has been favorable and rapid. Improvement was first noticeable in the general condition, then locally. When the injections are given every third day there is a noticeable diminution in the size of the swelling by the third day. During the progress of the disease I increased the iodid to 10 grains four times daily, and on several occasions I cauterized the granulations in the sinuses with nitrate of silver to favor drainage and destroy with the granulations some of the organisms. Examination made April 27, 1900, showed the internal organs and urine normal. The sinus in the mouth had been closed for one week, the outside sinuses for two weeks. Three pieces of necrosed alveolar process had been removed from time to time. The swelling was very much diminished in size, the induration almost gone.

CASE 7.—D. C. B., aged 41, a banker and cattle dealer, of robust health. Fourteen years ago noticed some swelling about the angle of the lower jaw on the left side. He had been engaged before that in the care of lumpy-jawed cattle. Four years ago he presented himself to me with an indurated swelling on the outer aspect of the lower jaw, just below the articular neck, the size of a small hickory nut, and another just behind the ascending ramus, connected, but not intimately, with the inferior maxilla. There was no suppuration. He had suffered for sixteen years from a troublesome wisdom tooth on that side. I made the diagnosis of actinomycosis, and ordered iodid of potash, 30 grains daily, and iodin ointment locally.

This was followed by decided improvement, but he left off the treatment in one month, and before the swelling had entirely disappeared. At times since then there has been temporary enlargement of the swelling, followed after a time by subsidence, but showing a progressive enlargement. He consulted me April 7, 1899, when the swellings were noticeably larger than when last seen, the induration marked, some trismus, no glandular enlargement, temperature normal. His general appearance was that of one in robust health. I cite to show that pure actinomycosis is non-suppurative.

Actinomycosis is defined as an infectious disease, usually chronic in its course, rarely acute, occurring in man and animals and caused by the growth in the tissues of actinomyces—the actinocladothrix—giving rise usually to swellings resembling sarcoma.

History.—Langenbeck found actinomyces in 1845, in

an abscess with caries of the vertebræ in man, and Lebut, in 1848, in a thoracic abscess. Bollinger, 1877, published his cases in cattle. In 1878, Israel published two in man, and in 1879 a third case. Ponfick, in 1882, wrote an article giving the history of several in man, and establishing the identity of the disease as seen in man and cattle. Belfield was the first to make a study of the disease in cattle in this country. Murphy, in 1892, reported the first case of actinomycosis in man published by an American author. Since that time numerous ones have been reported by various observers.

Etiology.—The disease is caused by the entrance of the actinocladothrix into the tissues. An open wound is necessary for the entrance of the cryptogam. With an open atrium, and the organism present, it may gain access to any part of the body, the skin, mucous membrane of the mouth, alimentary canal or respiratory tract. A carious tooth or an inflamed gum afford especially inviting points of entrance, due to the fact that they offer and maintain a wide-open door and are the parts most frequently brought in contact with the organism, which is carried into the mouth on grain or grass, straw or seeds; it may be inhaled or taken in with the drinking water. Hence farmers should be cautioned against the common customs of chewing or picking the teeth with straws or eating raw grain.

The literature and personal observation make me confident that the disease may be inoculated into the tissues of man from diseased beast or man. Murphy reports a case where the disease was presumably acquired from a dog, and Ponfick one following the bite of a louse. Numerous cases are reported in man after contact with big-jawed cattle. You will recall that Cases 3, 5, and 7, reported above, show that the patient had, prior to his illness, been engaged in caring for big-jawed cattle. Three cases have been reported where the disease was presumably carried by kissing.

Bacteriology.—The etiologic factor, as stated, is the actinocladothrix. According to authorities there are three distinguishing morphologic elements: 1, club-shaped formations; 2, a centrally-placed net-work of fungous filaments of varying shape and size; 3, fine coccus-like bodies.

My observation is that the club-shaped formations are often absent, or, more properly speaking, I have rarely found them present. The dichotomizing threads are frequent and may often be found running out from a common center, reminding one of a tuft of tickle-grass. The fine coccus-like bodies are, according to my observation, the most constant and characteristic element. You will often see these Meischler's corpuscles in contact with threads in such a way as to make you doubtful whether the organism is properly classed a cryptogam.

In staining I used Gram's method in most cases. Picrocarmin is a very practical stain, staining the fungus yellow and the other tissues red. I have, in common with many observers, found it difficult to study the organism in pus, and have found that treating the pus with a weak solution of caustic potash, say 1 to 2 per cent., was of great practical value in baring the organism. Ether may be used for the same purpose, but did not prove so satisfactory in my hands.

Pathology.—Almost every organ in the body has been named as the seat of primary actinomycosis. The most common points of entrance are: 1, the lower jaw; 2, the lungs; 3, the cecum. An analysis of five hundred cases showed that 55 per cent. occurred in the head and neck, 20 per cent. in the thorax and lungs, 20 per cent. in the abdomen, and in other parts 5 per cent.

Wherever the process is found, the microscope shows round cells with epithelioid and often giant cell infiltration, associated with connective tissue proliferation. The disease never extends in the direction of the lymph stream, but may grow into a vein or large lymphatic, and a fungous mass containing the organisms be carried to a distant organ.

The constitutional symptoms are not very marked in cases of actinomycosis unless there is combined with the ray-fungus one or more of the forms of pus organisms. Cases of advanced actinomycosis, even when complicated with pus formation, offer a striking contrast to cases of tuberculosis, sarcoma or carcinoma that have progressed to the same extent in the comparatively slight degree of pallor, emaciation or cachexia.

The temperature is but slightly or not at all elevated in cases of actinomycosis uncomplicated by septic processes. Even when sepsis is present the temperature runs low compared with the local manifestations. This is due, in my judgment, to the interference with absorption of the ptomains by reason of the dense infiltration of the tissues. The absence of glandular enlargement in actinomycosis is in striking contrast to the marked glandular enlargement found in tuberculosis and carcinoma.

Locally, the actinomycotic nodules or swellings are, as a rule, strikingly firm and hard, with a surrounding area or zone of edema. When the jaw is the seat of the trouble, associated with the induration there is a marked degree of trismus due to the muscular infiltration.

As a result of the infiltration of the tissues the nerves are compressed, giving rise to anesthesia and numbness; hence pain is only exceptionally a prominent symptom. In fact the reverse is true, the swellings being strikingly free from pain and sensitiveness. The painlessness of the swelling serves to distinguish it from phlegmon or carcinoma. In Cases 1 and 6 the pain was very intense for a short time, but subsequently they ran a comparatively painless course. The compression of the blood-vessels from the infiltration, as stated, gives rise to a surrounding zone of edema, and obstructs the circulation as evidenced by the slow return of blood after pressure on the swelling.

When the induration nears the skin or mucous membrane, the covering becomes red, later purplish and puffy, followed by spontaneous opening of the abscess. Its opening leaves a ragged wound, filled with pouting granulations which, as the process recedes, leaves a large ragged sinus leading down to the subadjacent bone or abscess cavity.

The density of the infiltration may be more nearly appreciated if we recall that when the process occurs in the jaw, the teeth are frequently erupted by the granulations. With the further subsidence of the process the tissues retract and contract, presenting a dense, scar-like feel. It is surprising, however, to see how perfectly the tissues are restored to their former consistency and elasticity with perfect recovery. I have seen extensive losses of substance about the jaw recovered from with strikingly little scarring.

The pus poured out, usually scanty in amount, varies in appearance with the associated pus germ, but in all cases is characterized by the occurrence of small bodies, pin-point to pin-head, rarely split pea in size, varying in color in different cases, from light gray to yellow, now and then green or black. These bodies contain the characteristic organism, and are made up largely of collec-

tions of them. Sometimes these bodies are surrounded by a calcareous covering.

The following summary from Murphy, bearing as it does chiefly on the symptomatology, I take the liberty to introduce here: 1. The growth of the disease is very indolent and sluggish except in the peritoneal cavity. 2. It is accompanied by very little pain. 3. The microbe does not produce a ptomain capable of causing a rise in temperature. 4. Pure infection with actinocladothrix is not accompanied by pus. Pus means secondary infection by streptococcus pyogenes. 5. The amount of infiltration around each nodule of granulation and its sero-purulent contents is very great compared with the small contents. 6. The greater the amount of suppuration the more malignant and rapid the progress of the disease. 7. Diffusion of the actinomyces *in loco* and by entrance into the blood-stream are the modes of extension; never the lymphatics and glands. Its extension is greatest in the direction opposite to the course of the lymphatics. 8. After evacuation of the contents the nodules heal rapidly, but recur in a few weeks if the germs are not all removed. 9. Fatal symptoms are tardy in appearing, the dense infiltration acting as a bar to the disease.

Treatment.—The weight of authority has, until the last three years, been decidedly in favor of surgical measures in the treatment of actinomycosis. All surgical authorities are agreed that anything short of complete removal is ineffective, if not positively detrimental. During the past three years the trend of the profession has been in the direction of medical treatment for this class of cases.

If we will impartially review the literature, we will be forced to admit the great value if not advantages of the treatment by iodid of potash. Since the iodid was first suggested by Thomasson, in 1885, for the treatment of actinomycosis in cattle, case after case has been reported in man and beast cured by its use. The United States Government Commission at Chicago, in 1893, reported 63 per cent. of recoveries in beef cattle suffering from actinomycosis where iodid of potash was administered to them. Berard, of France, says in recent cases 25 per cent. are cured by iodid alone, and 75 per cent. cured by combined surgical measures and the administration of iodid of potash. In chronic cases he reports one-third cured by iodid of potash.

The above report made by Berard, in 1897, certainly does not represent the present position of the iodid. A résumé of the literature of to-day would give a much higher percentage of recoveries. In fixing the percentage of recoveries under iodid, the first difficulty to be met is the frequent combination of surgical and other measures with it; the second, the lack of thoroughness in its administration; and third, the lack of long-continued administration. In the limited literature at my command I find sixty-three cases reported cured by the use of iodid alone, and only two cases where the iodid failed after a fair trial. A number of these were inoperable. The actinocladothrix is not destroyed by the iodid, but its growth and reproduction seem to be retarded. In view of these facts, the theory has been advanced that the iodid increases the fighting properties of the phagocytes.

I have, at the risk of being tedious, gone into this synopsis of the history of the use of iodid of potash in this disease because I feel that we have in this drug a most valuable agent for its management, and that one who subjects his patient to a hazardous surgical operation before giving the iodid treatment a thorough trial has taken unwarranted liberty with the life of his fellow man.

A case of actinomycosis of the lungs is reported cured by the internal use of oil of eucalyptus, and inhalations of the same drug three times daily. In estimating the value of any form of medication or surgical procedure in this disease, we must not lose sight of the fact that many cases of spontaneous recovery are recorded.

Various local measures have been used with advantage. The sinuses have been injected with peroxid of hydrogen and solution of iodin, the exuberant granulations cauterized with nitrate of silver and solutions of this nitrate injected into the sinuses with evident advantage. In the local treatment I try to control the suppuration and close the sinuses as quickly as possible, for, in common with other observers, I am satisfied that the disease yields much more promptly and satisfactorily to the iodid in the absence of suppuration.

Parenchymatous injections of a 5 per cent. solution of permanganate of potash, a 5 per cent. solution of carbolic acid—15 to 45 minims—and a 1 per cent. solution methyl violent have all resulted in cures.

Billroth reported a cure after the injection of tuberculin. The results of Gautier by the electrolytic action of a galvanic current of 50 milliamperes through two platinum needles on a 10 per cent. solution of iodid of potash injected into the actinomycotic induration—with success in his hands—do not seem to have been received with favor. Gould's "American Yearbook of Medicine and Surgery," for 1897, contains a brief résumé of two cases treated by Rydgier, and reported in the *Wiener Klinische Wochenschrift,* of Sept. 12, 1895. The treatment was by the injection into the tissues of a 1 per cent. solution of iodid of potash. From this report I adopted the plan of treatment which served me so well in Cases 1, 5 and 6.

I have adhered to the 1 per cent. solution: 1. Because that strength of solution has the greatest osmotic power, i. e., the greatest power of penetrating the tissues. 2. I have feared that a stronger solution might prove injurious to the tissues.

I have used the limited amount, viz., 15 minims, because I feared the damaging influence on the tissues of too much distension, and because the reaction seemed to be too marked when a greater quantity was used, or more than one injection employed. I think the increased edema after the injection, if too great, may retard absorption. I have not made use of any other drug, hypodermically, because I have been satisfied with the results.

In conclusion, I trust we have added some testimony to establish the following positions: 1. That actinomycosis is not an uncommon disease. 2. That, where pure, it is a non-suppurative, afebrile, comparatively painless, slow-progressing disease. 3. That the clinical signs and symptoms are often pathognomonic. 4. That the club-shaped bodies, single and in asters, are often absent, the threads more frequently present, and the coccus-like bodies most constantly present. 5. That combined surgical measures and the administration of the iodid of potash give the best results. 6. That iodid of potash administered internally cures a large percentage of cases. And, finally, that the interstitial injection of iodid of potash into the infected tissues exerts a strikingly salutary influence over the disease.

Since preparing this article my attention has been called to an article published by Ruhräh, of Baltimore,

in the *Annals of Surgery*, vol. xxx. He has collected all the American cases of actinomycosis, sixty-five in number, reported to January, 1899. His statement that "the thoracic cases do badly, as a rule, no matter what treatment is followed," is in accordance with the prevailing opinion of the profession.

TROPICAL ABSCESS OF THE LIVER.

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With the continuous residence of our army in the tropics and the constant return to the United States of scores of invalided soldiers, the subject of tropical diseases has assumed new importance to the medical profession of this country. Probably no subject has been brought so intimately to its attention as that of abscess of the liver. Its relation to dysentery is known, and the frequent development of liver abscess late in the course of this disease explains its appearance so often in the United States.

From the earliest times dysentery has been the scourge of armies, but in our own campaign in the Philippines we have had superimposed on the malevolent influences of the massing of great bodies of men together the presence of an endemic disease. The record of the First Reserve Hospital in Manila for one year—March 1, 1899-1900—shows that dysentery and diarrhea were the cause of more than one-fifth of the sickness in our army. In this year there were treated at this hospital alone 2251 cases of diarrhea and 1391 of pronounced dysentery. Dysentery and diarrhea followed directly the course of the rainy season. During June, July and August the sick report was crowded with these cases. Often whole companies would be stricken as with an epidemic. The sudden chilling and exposure of the first rains made the number of cases during the month of June more than three times as great as that of any other month. With the American in the tropics dysentery is always present, and with it abscess of the liver. The conditions which favor the development of the one makes more evident the existence of the other.

Numerous statistics demonstrate this fact. In 3680 dysentery autopsies made in various tropical countries and reported by Manson, 21 per cent. showed abscess of the liver. The exact number of cases among our own troops can not be definitely stated, but the prevalence of the disease and its intimate relation to amebic dysentery is well shown by the examination of the records of ninety-six dysentery autopsies performed at the First Reserve Hospital, Manila, during the year 1899. Abscess of the liver was present in twelve cases—over 12 per cent. While this number is a small one on which to base a statistical opinion, yet it gives very nearly the correct estimate of the percentage of liver abscesses developing in cases of chronic tropical dysentery among Europeans. The native population in the Philippines rarely develops this disease, although dysentery is common among them. Not a single case of liver abscess was seen among the natives in my own experience in the islands, and I am informed by well-educated Spanish and Philippino physicians that to them the disease is almost unknown.

The life led by Europeans in the tropics doubtless explains the frequency of liver abscess. Overeating and overdrinking, together with lack of exercise, favor hepatic engorgement, and the sudden chilling and exposure incident to the first few months of residence furnishes the exciting cause in the development of an acute amebic dysentery.

Although dysentery is without doubt a cause of tropical abscess, the part played by the ameba coli in its development is as yet undetermined. Whether it was a cause or a result in our own cases we have no evidence to offer. All were of the amebic type of dysentery. The organism was either found in the stools or the pathologic picture was so typical that search was not made for it. From the pus of the abscess, or the abscess wall itself, there is record of the ameba in only five cases. This should not, however, lead to the conclusion that the organism had not been present in the remainder, for most of these cases were long standing, with great destruction of liver substance, and a sufficiently persistent search was not made in every one. Only one case of liver abscess was not dysenteric, but was apparently a multiple idiopathic abscess. There was no history of dysentery or diarrhea, nor any postmortem evidence of previous amebic infection, and the organism could not be obtained from the liver pus.

Of the 13 cases on our records, 5 were single and 8 were multiple abscesses. As Manson[1] very aptly remarks: "Whether the resulting abscess be single or multiple is more or less a matter of accident. If the weakened liver is efficiently inoculated at one point only, there will be only one abscess; if at many points, then there is multiple abscess."

The right lobe was most commonly affected. In only 2 instances was the left involved. Five cases of abscess of the liver came under our observation clinically; 3 were multiple abscesses in which nearly the whole liver substance was destroyed; 2 were large single abscesses. All 5 were operated on, and only 1 recovered.

In the diagnois of abscesses of the liver symptoms are of but little value. Local signs and the detection of pus by aspiration establishes the diagnosis. Great emaciation and an anemic jaundice are apparently commensurate with the destruction of liver substance. The word anemic is applied to this jaundice to indicate a peculiar "diluted," faded, almost dusky, yellow color of the skin common in these cases. A hectic temperature, a rapid running pulse, with the early development of typhoid symptoms are in proportion to the amount of pus present; for there seems to be no tendency to limit absorption in abscess of the liver. Sordes soon collects on the teeth and lips, and mental hebetude develops early. The pulse is rapid and running, often being out of all proportion to the temperature. It may remain at 140 to 160, or even higher, for weeks just before death. Constipation is the rule, with offensive gray-colored stools, but diarrhea is common late in the disease. A leucocytosis is generally present, but is of little value in the diagnosis as it is very often associated with localized peritonitis, or involvement of the mesenteric glands, in cases of chronic dysentery. Often the local and general symptoms of abscess may develop from a patch of necrosis without the formation of pus. In these cases it is evident aspiration would fail to detect the infected area in the early course of the disease. Two cases came to autopsy from dysentery, and the abscesses would have undoubtedly developed had life been prolonged. A localized peritonitis is present in most cases of long duration. Involvement of the diaphragm is evidenced by persistent cough with increased pain on deep inspiration. Rupture of the abscess into the pleura, with involvement of the lung, is the commonest form of spontaneous evacuation; two of our autopsies showed

1. Tropical Diseases, p. 364.

this condition, and it was present in one operative case.

The great increase in the area of liver dulness, not only above and below, but particularly to the left of the median line was found in all of our cases. Persistent pain over the whole liver region, with a point of local tenderness just below the margin of the ribs in the anterior axillary line is present in most cases. Local bulging, increase in the width of the interspaces, with local edema of the right side makes abscess most probable, but aspiration alone establishes the diagnosis. In our cases a long needle of goodly size was used, so that the thickened pus might be drawn through it. A general anesthetic was given and the needle introduced in the mid-axillary line in the eighth interspace and passed in five or six different directions to its full extent. If this failed to detect pus additional punctures were made both in the right and left lobes, for very often a liver abscess may not be detected by the ordinary puncture in the eighth interspace. This condition was present in one of our cases, and it was not until additional punctures had been made near the median line below the ribs that an abscess was discovered in the left lobe.

In order to determine the extent of liver accessible to aspiration from this point a series of liver punctures were made with long needles, postmortem. The needles were left in situ and dissection carried down through the liver substance, when it was found that not one-half of the organ was accessible from the eighth interspace. In one case an echinococcic cyst the size of a small orange lay in the posterior inferior portion of the right lobe toward the median line, and entirely escaped detection.

From these facts we were led to the conclusion that additional punctures other than in the eighth interspace must be made before an abscess of the liver can be excluded in the diagnosis. With ordinary care there is little danger of injuring the gall-bladder, or the large vessels, and with strict asepsis the operation is entirely justifiable as a means of differential diagnosis. Not an untoward complication resulted in twenty-one cases of aspiration. The presence of pus once established makes operation imperative. Only a limited number of patients recover; not from the fact that the operation is difficult, but because the abscess is generally multiple, or, if single, involves a great amount of liver substance, and comes to the surgeon only late in the course of the disease. Unless there is evidence of pointing, it is best to excise a portion of a rib and drain from the side, as there is thus less danger of infection and greater facility in gaining access to the abscess cavity.

Even in most extensive liver abscesses the lower anterior border of the liver is often not involved, the infectious process being confined to the substance of the organ. In many instances the abscess can be reached only with the greatest difficulty by the incision below the costal margin. By excising a portion of the eighth or ninth rib in the mid-axillary line there is almost no danger of infection, but little shock and the freest possible drainage in the most dependent position. Large double drainage tubes are used. The removal of a portion of a rib not only gives more room for exploration, but insures against compression of the tubes as the case progresses. If the liver is adherent, and the peritoneum or pleura thus protected by adhesions, the abscess may be opened at once. If there is danger of infecting either, a delay of forty-eight hours is obviously wise. The instruction to "stitch the capsule of the liver to the margin of the wound" is more didactic than practical. Rarely, if ever, can this be done, as the liver capsule—particularly that of an inflamed liver—is so friable that no stitches will hold, and but little protection would be afforded if they did. Simply packing the wound with iodoform gauze and waiting forty-eight hours will accomplish the desired result. On account of free hemorrhage in opening a deep-seated abscess the thermocautery may be used, but this is rarely necessary, as access can be readily gained to the abscess cavity by puncture with the finger or a blunt instrument. Severe hemorrhage, if it occurs, can be controlled by packing. Usually it is best simply to drain the abscess at operation and to use no irrigation for forty-eight hours, owing to the weakened condition of the patient and the danger of infecting the pleura or peritoneum. Normal salt solution, sterile water or weak antiseptic solutions should be used, as absorption is very great and strong antiseptics are dangerous. Under daily irrigation with such solutions the discharge will completely disappear in a surprisingly short time— a week or ten days even for a large abscess. Free stimulation and most nourishing foods are particularly essential in the after-treatment.

Case 10,635.—April 20, 1900, Private T. S., Co. F, 42d U. S. V., was seen. He had never been sick since childhood until six weeks before, when he was attacked with diarrhea. The symptoms of dysentery rapidly developed, and on his admission, April 25, he was passing from five to twelve bloody mucous stools a day. His temperature was 101, tongue dry, brown and cracked, pulse 140 and thready. The spleen was slightly enlarged, and the abdomen tympanitic and tender on pressure. A point of great tenderness was evident just below the ribs over the region of the gall-bladder. The liver extended from the fourth interspace to the level of the umbilicus, 1½ inches below the costal margin in the right mammillary line, and about three inches to the left of the left median line. He was in a condition of mental hebetude, and complained of little pain except at bowel movements. The blood count revealed a leucocytosis of 18,000. Widal's reaction was negative and the plasmodium malariæ was not found. Under ether, an aspirating needle was inserted through the eighth interspace and pus was found on the first puncture. An incision 1½ inches long was made over the eighth rib, 1 inch of the rib excised and the abscess at once opened and drained. More than one pint of fetid liver pus escaped. The abscess cavity was not irrigated until the second day, and then daily irrigations of sterile water were begun. The pus had completely disappeared on the tenth day and the man was out of bed. Recovery was complete. Amebæ were found in the abscess cavity.

Case 8215.—Sergeant J. D., Troop E, 11th Cav., for many months had had chronic dysentery. On admission, Nov. 21, 1899, he was having from four to ten stools daily, his temperature was hectic, 99 to 102, pulse 138 and weak, and he was very weak and greatly emaciated. For several weeks he had had marked tenderness over the region of the gall-bladder; this had greatly increased. Intermittent hiccough and a persistent dry cough were troublesome, and suggested involvement of the diaphragm. The liver extended 1 inch below the costal margin in the nipple line, and there was marked bulging at this point and marked edema of the whole right side.

No aspiration was made in this case, as pus was evident—either an abscess or a suppurating gall-bladder. An incision was made one inch below the ribs in the nipple line, down to the peritoneum. This was found adherent, and so the abscess very large, "big as your head," was at once evacuated. The cavity was irrigated with normal salt solution and three large drainage-tubes inserted. The pulse was so weak during operation that three pints of normal salt solution were given intravenously and one pint by hypodermoclysis. Despite this and the freest stimulation, the patient steadily grew worse, and died five days later. The autopsy showed multiple amebic abscesses, which had destroyed nearly the whole liver substance.

Case 4786.—Private Wm. H. H., Co. K, 13th U. S. Inf., had never been ill until Aug. 4, 1899, when he developed a severe case of acute dysentery. From the onset his temperature was

unusually high—103 to 105. The discharges were of the characteristic mucus and blood, and so frequent that he was constantly on the bed-pan—more than forty movements in twenty-four hours. Almost from the first he complained of pain over the region of the liver. The organ rapidly enlarged, and by the twelfth day the whole right side was edematous. Aspiration revealed the presence of pus and incision was made in the mid-axillary line, excising a portion of the eighth rib. Only a small amount of pus was evacuated. The patient never rallied from the operation, and died on the thirteenth day. The autopsy showed one small abscess with several necrotic patches throughout the substance of the organ, which would undoubtedly have formed additional abscesses had the patient lived.

Case 10,741.—G. M. W., a clerk, was seen March 7, 1900 There was no history of dysentery or diarrhea. The patient had been in the Orient five months, and in fair health until about four weeks before, when he rapidly lost weight without assignable cause. On admission to the hospital, March 7, he was much emaciated and of a peculiar dusky, jaundiced color. His temperature was subnormal and his pulse rapid and feeble. Pain over the liver was constant, with the point of greatest tenderness one inch below the costal margin in the mammillary line. The organ was very much enlarged, extending four finger breadths below the ribs. Under ether the aspirating-needle revealed pus. An incision 2½ inches long was made below the costal border in the right nipple line. The liver was found adherent to the parietal peritoneum. On attempting to open the abscess such free hemorrhage occurred that the wound was packed with iodoform gauze and partially closed with silkworm gut sutures. Further operative procedure was delayed forty-eight hours, when it was intended to open the abscess with the Paquelin cautery. However, on separating the capsule from the diaphragm, about one pint of pus was evacuated. A drainage of double tubing was instituted, and the patient left the table in a very weak condition and died forty-eight hours later. The autopsy showed multiple abscesses of the liver involving nearly its whole structure. They varied in size from one to five inches in diameter and contained peculiarly fetid pus. There was no previous history or evidence of dysentery, nor could the ameba be found. Apparently the case was one of multiple liver abscess following general hepatitis. The mesenteric glands were much enlarged and the spleen was septic.

Case 220.—Private C. F. B., Co. I, 4th U.S.Inf., gave a history of chronic dysentery of several months standing, but on the date of admission considered himself cured of that disease. His present illness began so insidiously that he could not state the time of its onset. During the preceding month he had lost greatly in weight and suffered from a constant steady pain in the epigastrium. On admission, the temperature was subnormal and his pulse rapid and feeble, with a dry brown tongue and mental hebetude, and his skin a dusky jaundiced color. The liver was much enlarged, extending fully three inches to the left of the median line and 1½inches below the ribs. Aspiration at the eighth interspace, in five or six directions, failed to detect pus, so the needle was introduced into the left lobe from a point just to the right of the median line, ½ inch below the costal margin. Here puncture was successful and an incision was made down to the liver. The capsule and parietal peritoneum were adherent and a large abscess was opened and drained, with no irrigation. The patient rallied from the operation, but died on the fifth day. The autopsy revealed a large single abscess occupying the whole left lobe. It had perforated the diaphragm, and opening up the pleura had set up a septic pneumonia. Healed amebic ulcers were found in the intestines, but the ameba coli could not be distinguished.

Migration of Needles.—The *Medical Press and Circular* for April 24 reports the removal of about sixty needles from a domestic, aged 16, who says that five years ago, on a wager, she swallowed four or five packages. No inconvenience was noticed until recently, when the needles presented, usually by the head, in various portions of the body.

THE PREVENTION OF INSANITY.

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The necessity for more radical measures for the prevention of insanity must be manifest to any one who will judicially consider the question of its rapid increase; for while there has been some attempt to minimize this important question, yet it is capable of easy demonstration that insanity has increased out of all due proportion to the increase in population in the last thirty or forty years. The statistics of Great Britain show that the proportion of insane to the whole population in 1860 was 1 to 523, and in 1890, 1 to 320; and in Illinois the proportion of insane to the population is about 1 to 400.

Preventive measures must come from the States. The learned and self-sacrificing profession to which we belong can show the way, but the state must compel people to walk therein. The state has assumed the care and maintenance of the insane; indeed, has made it a criminal offense for any one to restrain them without the consent of her courts. Inasmuch as the state has assumed this great responsibility, it is her duty, in the interests of altruism and of economy, to use every possible means for the prevention of insanity; to find out how this may be done; to educate the people as to methods of doing it and to enforce those methods. The state should, through her State Board of Health, furnish the people with information that they can comprehend as to the causes of insanity, and with methods that may be applied for its prevention; and the state should be as ready, with the same paternal power she uses in smallpox, cholera, etc., to enforce those methods that have the approval of the medical profession. The state should make her insane hospitals schools for the instruction of medical students in insanity. The state should, by competent authority, select by competitive examination senior students in medicine from our medical colleges, and place them in the hospitals for the insane as medical internes. At least half a dozen can be placed in each hospital for the insane in this state. These internes should remain at least one year, receiving board, lodging, and a small gratuity at the end of the service, and by this means at least thirty physicians every year, with mental attainments of a high order, will be sent forth with a good clinical knowledge of insanity, its prevention and its treatment, and become so many prophylactic centers in as many communities. But a few years would be necessary to have, from one end of Illinois to the other, an abundance of well-skilled medical men competent to solve this great problem.

The state should assist in providing treatment for carefully selected cases in wards connected with the hospitals now to be found in every city and almost every town in the state. Admission to these wards should be by the same rules as apply to any other disease. The family of the patient would make but little objection to the prompt treatment of the case in such a manner, while it would decidedly object to the patient being sent to a hospital for the insane by a jury trial at some distant point, and especially to-day when our hospitals have become political machines for the reward of political favors. The patients in these hospital wards, under such scientific treatment as they may promptly obtain, will recover in very much larger proportion than is

possible now, when the prejudices of the people, the court proceedings, and the management of these institutions are all barriers to their prompt and successful treatment. Provision for the treatment and care of the acute cases of insanity near their homes is very much better than the building of palatial institutions in favored localities in the state.

The time allotted to this paper will only permit a very superficial consideration of the prevention of insanity in detail.

At the head of causative factors must stand heredity, that great biologic law by which living beings repeat the character of their ancestors, the sum of ancestral influence directly transmitted, whether as a specific tendency, or as a deficient vitality, or both; "that tyranny of organization," as Maudsley puts it, in them from which no one can escape, that destiny which unconsciously and irresistibly shapes our ends, and some have sought to minimize it and to substitute for it what they call tradition. This heredity is not necessarily the heredity of insanity, for nervous diseases, as is well known, undergo transmutation in transmission, so that any neurosis may be the basis of insanity. Heredity as a factor in the production of insanity can be reached radically by only two methods: 1, the regulation of marriage; 2, the asexualization of the degenerates; or both. But in order that either one of these methods may be established, there must be a great deal of educational work done by the medical profession.

My attention was called a few days ago to a prominent stock raiser in Kentucky, who refused to purchase a bay stallion, a very valuable animal, because back in the fifth or sixth generation one of his progenitors had bred gray. This stock raiser married a woman whose brother at the time was insane, and whose father and grandfather died insane. Fortunately in this case, so far there has been no progeny. Some say that the regulation of marriage is an utter impossibility. Such people forget that in Illinois to-day marriage, to a very limited degree, is regulated, and all we need to do is to extend the regulating powers of the present law to make it meet the indications of the present conditions. Asexualization, as is known very well, can be accomplished without danger to life, without producing deformities, without destroying sexual desire, by ligating the Fallopian tubes on the one hand, and the seminal ducts on the other.

It is not necessary for me to emphasize the fact that a mother with this neurotic inheritance, when she becomes pregnant, must be carefully guarded during the whole period of gestation, placed under the very best hygienic rules and conditions, compelled carefully to avoid the use of narcotic drugs and stimulants; and when her child is born, if possible, a healthful wet nurse should be provided, and in its early days, careful training, so that as the child grows older he may have a robust body. His education should be largely directed to producing a body with fine muscular development; his intellectual training should be carried on with the greatest possible care, and an occupation should be selected for him which will be the least likely, by its extraordinary demands, to dethrone his reason.

It is unnecessary for me to consume time by saying that our educational system in the public schools, so far as the great bulk of neurotic children is concerned, is sadly deficient. We know the causative effects of syphilis, of tuberculosis, of infectious and miasmatic diseases, of the arthritic diatheses, of the effect of intoxicants, not only voluntary intoxication by alcohol and numerous similar drugs, but by auto-intoxication through physiological instability, defective metabolism, defective gland secretion from the alimentary tract, the liver and kidneys. We know the effect of deficient alimentation, and for all these several important factors we are familiar with the preventive measures.

WHEN SHOULD WE OPERATE IN APPENDICITIS?

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So much has been written on the subject of appendicitis, that I have hardly the temerity to proceed and I am sure I would not have if it was not for the memory of many cases that I feel could have been saved and others "in futuro" that never will until some of the general practitioners rise above their prejudices. I believe it is the duty of all operators to agitate this subject until the correct position of operative procedures is thoroughly appreciated. If men who do not operate and meet these cases would have in mind septic ones and their serious termination—if not in death, they go on to abscess, drainage, ventral hernia, and a long convalescence—as well as catarrhal ones with their recoveries, then much will have been accomplished. To diagnose and correctly appreciate the uncertain cases is the most essential feature. Like other surgical conditions that invite procrastination, appendicitis may lead us to a serious or fatal termination. I purpose treating only one feature of the disease, and that the old one, namely, shall we operate in all cases, or shall we follow an expectant line of treatment? There are many able men in favor of both expedients.

Important Factors.—There are important factors in every case that the general practitioner should consider, viz.: Are the symptoms clear-cut and urgent? Is it a primary or recurring case? How far advanced is it? What is the opinion of the patient's friends or advisers? Has some one in the vicinity had a slight catarrhal attack of appenditis, or other local disease with the character of appendicitis, which has ended in recovery without surgical interference, or has surgical interference in some neglected or fulminative case ended fatally? Either condition will have a material effect on the family and friends in deciding concerning an operation. Then there is the clinical experience of the one in attendance and the class of cases he has met, the question whether or not he does surgery, whether he is opposed to calling in a consultant, how many cases he has had and their outcome, and lastly, whether he concludes his consultant is advising an operation purely because he is desirous of performing it.

There is no fair comparison between the eminent specialists of the large centers, whose every utterance is law to so many, who have such a wide territory to draw from that their patients and even their professional brethren do not know of their results, and the practitioners of smaller places. We general practitioners are most excusable—with our limited opportunities—for the feeling of anxiety and apprehension that comes with each case of appendicitis, when we review the great variation in the views of our most eminent men. One will say, "Operate at once;" another, "Be conservative and follow an expectant line of treatment that you may have the advantage of an elective operation;" while still another equally eminent man says that operative

procedures are seldom indicated. Errors of judgment will occur with us all, but these conditions must be met and corrected by men of the greatest experience. I am sure that mistakes, if properly interpreted, are powerful for good.

Indicative Symptoms.—What symptoms are of service to us in reaching a conclusion that we should operate in a case of appendicitis? Temperature, pulse, respiration, general or localized pain, vomiting, sudden onset, tenderness in the immediate region of the appendix, the facial expression, the presence of a tumor, rigidity of the abdominal muscles, edema of the abdominal walls, distension of the abdomen, tympanites and chill, are all at one time or another observed in appendicitis. The pulse, temperature, respiration, nausea and vomiting are in no sense a guide in the first stage because different patients react so differently to the first impressions of the toxins. The pain is at first referred to the umbilicus or epigastric region, and then after a few hours settles down in the region of McBurney's point; you can readily appreciate that the exact point varies according to the location of the appendix. Later, we may have a severe paroxysm of pain, which so many characterize as the time at which the rupture occurs; it is of value in that it indicates the time at which the alarming symptoms commenced.

The presence or absence of pus in an inguinal tumor is a condition which must be considered very carefully in estimating the value of the symptoms; as an acute general peritonitis may appear in a case of appendicitis in which the general cavity is not protected, or a perforated appendix may be walled in by lymph which is barely sufficient to close the opening or surround the slough. It is of interest to note that the abdominal muscles protect an inflamed appendix by their rigidity, and that they do so regularly, and that they do not protect in the same way an inflamed ovary or tube, only an inch or two distant, but remain normally relaxed.

The rigidity of the abdominal muscles is an important symptom, and when associated with the anxious facial expression and rapid pulse, I always feel that there is trouble ahead. In late cases increased edema of the abdominal walls, with distension of the abdomen and progressive inflammation, marked at first by a rise in temperature, which is shortly followed by a fall, with a weaker and quicker pulse, is characteristic of a diffuse septic peritonitis; this condition, preceded by a severe paroxysm of pain in that region, indicates a ruptured appendix, which may be diffused or walled off. A chill sometimes occurs at the onset, again at the stage of perforation, and later if sepsis supervenes.

Remarks.—During the past year I have been called in consultation in nine cases of septic appendicitis which succumbed to the disease, and which, I believe, could have been saved if those in attendance had acted along the lines of our present conclusions in these cases. I have also operated on at least a dozen cases of fulminative appendicitis, during the same period, sent to me by another class of observers, without a death, and in five of this number rupture had occurred though it was not thirty-six hours from the initial symptoms. How can we avoid the fatality of the first variety? Only by the attending physician associating with himself, when in doubt, some one thoroughly familiar with these cases, and so being in a position to differentiate the catarrhal from the septic cases, and thus reaching those requiring operative procedure early.

OPERATING UNDER X-RAYS.

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The removal of foreign bodies which have been accurately located by the fluoroscope or skiagraph has come to constitute every-day operations in surgical work. I have not, however, as yet seen any report of a case in which the surgical work itself was done under the light furnished by the *x*-ray and with the aid of the fluoroscope. Having had one such experience I deem it worthy of presentation to the profession.

George E. R., aged 9 years, was shot July 4, 1899. The bullet was a Flobert and entered just above the right patella. The injury seemed to be slight and the wound healed by first intention. Some three weeks later, the joint beginning to give him trouble, an examination was made by his physician, Dr. S. M. Sherman, of this city, who thought he detected the bullet under the skin at one side of the patella. He cut down upon the supposed bullet, but found nothing. I saw the case for the first time on July 25, at the office of Dr. Early, an expert radiographer. With the fluoroscope the bullet could be seen with very great distinctness, as the boy lay on his back, on a line with the upper border of the patella and apparently resting on the upper portion of the articular surface of the inner condyle of the femur. It could be seen very distinctly and its removal was apparently a matter of great ease. A skiagraph was made which verified the view afforded by the fluoroscope.

The bullet, which seemed to be superficial, was located on the opposite side of the patella from that which had been operated on by Dr. Sherman a few days before. The operation wound was suppurating freely. Under an anesthetic, administered by Dr. Sherman, an operation was made for the removal of the bullet, July 29. A small incision was first made and enlarged as necessary, but notwithstanding a most thorough search no bullet could be found.

The only explanation that could be offered of the failure to find the bullet was that it was free in the joint and had simply changed its location during the intervening period. The patient was therefore returned to Dr. Early's office and the fluoroscope again used July 30. This showed the bullet at the back of the joint, but movable; its position could be shifted by rolling the boy upon his abdomen. Since it was plain that the position of the bullet varied with changes in the position of the limb, it was evident that unless we wished to open the joint widely the operation must be made with the use of the fluoroscope. Accordingly preparations were completed and the operation made on the following day.

The bullet was located at the bottom of the joint, the patient lying upon his back. When he was rolled on to the abdomen the bullet dropped down a little but could not be brought to the dependent portion of the joint. The joint was therefore opened through a small lateral incision, and a pair of delicate forceps introduced, hoping to catch the bullet. The operation consisted in an attempt to catch a shadow with a shadow. In order to determine the position of the bullet and also of the point of the forceps, it was necessary to locate them in two planes, and this could only be done by rolling the patient back and forth from back to side, so as to get two views. With great difficulty the bullet was finally grasped, when it was found to be impossible to withdraw the forceps with the bullet in its grasp owing to the approximation of the articular surfaces. The bullet was therefore pushed up to the opposite side of the joint and extracted through a minute counter-opening.

All things considered, I never performed a more difficult operation. The room was necessarily dark, the day was hot, and the noise of the machine was almost intolerable, while the fear of infection from the suppurating wound, which was in close proximity to my own incisions, was constantly before me.

Fortunately, although there was some inflammatory exudate present in the joint at the time of operating, there was no infection from the outside. The incision was closed carefully without drainage, a splint applied to secure fixation, and recovery was entirely uneventful, the ultimate motion of the joint being perfect.

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THE PROTOZOON OF CANCER.

After some three or four years' work the New York State Pathological Laboratory at Buffalo, established by the state for the purpose of studying the etiology of cancer, proclaims, through its director, Dr. Harvey R. Gaylord,[1] that the cause of cancer has been found to be a protozoon or animal parasite. This article represents the official report of the laboratory to the legislature of New York. Reports of this announcement have been referred to previously in THE JOURNAL.[2] The facts in the case, on the study of which interest as to the nature of certain bodies observed in cancers was aroused, are briefly as follows: An adenocarcinoma, probably originating in the appendix, spread to the peritoneum, underwent mucoid degeneration, and the peritoneal cavity was filled with a clear, straw-colored fluid. A quantity of this fluid was secured under aseptic conditions and found to contain a large number of small hyaline bodies which changed their form and size under the microscope and passed through a cycle of development to what appeared to be a spore-forming stage. This fluid was injected into the abdominal cavity of a dog and a guinea-pig, producing a marked peritonitis, the exudate containing similar bodies to those mentioned above. Some of the bodies were observed to send out pseudopods toward air-cells in the microscopic preparation. Peritoneal fluid from the case of peritoneal carcinoma was also injected into the jugular vein of a guinea-pig, which, when killed fifty days later, had numerous white nodules in the lungs, and on microscopic examination these nodules proved to be beginning foci of adenocarcinoma. Peculiar bodies were found in the cells of the splenic follicles and in the cells of the tumors of the lungs. Efforts to cultivate these bodies failed at this time. Later cultivation experiments are said to have been more successful, but unfortunately no details are given in this article. Following these experiments much study was given to fresh scrapings and hardened sections of cancers. Bodies interpreted as parasites were found with almost unvarying constancy in all cancers examined. Observations seem to indicate that the bodies increased very rapidly just before or soon after death. Several forms are described, the earliest being round like a coccus, then a larger form much like oil drops, but not giving all the reactions of fat, then an ameboid, nucleated form resembling a clear leucocyte, and finally a spore sac, seen mostly post-mortem, in which the young forms arise. The so-called cancer milk of the older writers is said to consist of an almost pure culture of these bodies. The development of the smaller forms was followed in hanging-drop preparations through the ameboid and nucleated stage into the spore-sac. In sections of fixed preparations only the small forms remain demonstrable and appear as the fuchsin bodies described by Russell in 1890, and believed by him to be yeasts or blastomycetes.

In the efforts to determine the nature of these bodies or organisms, full consideration is given to the work of Sanfelice, Russell and many others who champion the blastomycetic theory of the origin of cancer. Gaylord reviews the principal features of this work, which has formed the subject of reviews and abstracts in the columns of THE JOURNAL.[1] Plimmer's work of demonstrating certain peculiar "cancer parasites" or "Plimmer's bodies" in 88 per cent. of 1278 carcinomas is considered at length. Plimmer's bodies, as revealed by his special method, are rounded bodies of diverse size, with a central portion not unlike a nucleus, yet differing in staining reactions from ordinary nuclei, a body, and a capsule. Budding forms are rarely seen, and sometimes there is merely a capsule with central dot or dots. Russell's bodies as a rule are homogeneous. With the aid of Plimmer's method Gaylord and his associates were able to substantiate Plimmer's claim that these bodies are present in carcinomas; they also found them in sarcomas and even in histologically non-malignant adenofibroma. Plimmer's bodies could not be found in other tissues, such as the lesions of bacterial and blastomycetic infections. As is well known, hyaline bodies morphologically indistinguishable from Russell's bodies occur sometimes in great abundance in a variety of lesions other than tumors and even in the normal tissues. Gaylord found Russell's bodies quite numerous at the periphery of growing tumors and in adjacent lymph glands, even when these were free from metastases. He calls attention to the similarity between Plimmer's bodies, especially as seen in the fresh condition, and certain appearances in carcinoma described by Sjöbring and by Eisen as protozoa. And in the next place he traces a direct morphologic relationship between Plimmer's bodies and those of Russell. Failing to find in tumors any structures that could be considered as blastomycetes, and an elaborate series of culture experiments with tumors proving of uniformly negative results, Gaylord reaches the conclusion that Plimmer's bodies, Russell's fuchsin bodies and the forms regarded by others as protozoa are identical with the organism—a protozoon, he thinks—studied in the fresh state and referred to in the beginning of this article. He finds that the protozoon of cancer repeats many of the developmental stages of the "vaccin organism" of Gorini

1. Am. Jour. of Med. Sci., 1901, cxxi, 503-539.
2. JOURNAL A. M. A., April 6, 971 and 979.

1. May 27 and Dec. 2, 1899.

and of Funk, which is regarded as a protozoon. Numerous animal inoculations have been made with carcinomatous and sarcomatous material of different sorts. The experiments are to form the subject of a subsequent report. It has been found, however, that animals are readily infected; they become emaciated and die at varying intervals, sometimes not until several months after inoculation. The lesions are not striking. A moderate amount of fluid occurs in the peritoneal cavity and there is enlargement of the abdominal lymph glands. The peritoneal fluid, the organs, and the blood contain large numbers of "the parasites" when examined fresh. One dog showed a large lymphoma of the spleen. Another dog inoculated with sarcoma showed typical metastases in all of the regional lymph nodes. Two guinea-pigs and two rabbits, inoculated in the jugular vein, showed similar lesions in the lungs to those in the guinea-pig mentioned in the foregoing, and these are all interpreted as beginning adenocarcinoma of the bronchi. One guinea-pig presented lesions regarded as primary carcinoma of the lungs and liver, and one dog a lymphoma of the spleen following inoculation with dried lymph nodes from a case of carcinoma. In all these animals the tumor cells contained "the characteristic forms of the parasite."

Similar organisms are said to have been found in syphilis. All organs, including the blood of all patients dying from cancer, contain large numbers of the organisms, which are present in the peripheral blood in all cases of cancer cachexia. A large amount of work along the lines suggested by the results here summarized is foreshadowed, and if the expectations of the Buffalo laboratory are fulfilled we are on the verge of an era in which the protozoa will occupy a large part of the field of etiologic investigation. But we must not expect too much. The exact nature of the organism, or group of organisms, spoken of by Gaylord as protozoic in character, is not settled. The developmental cycles have not yet been traced by authoritative zoologists. Its occurrence in so many different conditions and the production in animals of different lesions are bewildering, to say the least. Definite, distinct, typical tumors with metastases, regional and general, have not been produced in convincing numbers and with convincing regularity. That many of the cell inclusions in carcinoma are not satisfactorily explained on the score of degenerations can not be doubted, but the claim that Russell's fuchsin bodies, Plimmer's bodies, and the protozoon forms and blastomycetes of other authors are all parts of the developmental cycle of one organism rests as yet upon too purely a morphologic basis to be accepted without hesitation.

LEUCOCYTOSIS IN TYPHOID FEVER.

It has become generally appreciated that, while in ordinary, uncomplicated cases of typhoid fever, the number of colorless corpuscles in the blood is, as a rule, diminished, or at any rate not increased, leucocytosis develops in the presence of complications; so that the discovery of this condition should put the clinician on his guard and stimulate to increased watchfulness. Systematic and repeated examination of the blood in cases of typhoid fever may thus be the means of detecting complications that might otherwise be unsuspected or be discovered only when they had reached a point at which relief could be afforded with difficulty, if at all. The presence or absence of leucocytosis, further, may be a most valuable diagnostic guide when perforation of the bowel is suspected or more or less well-defined symptoms of this condition have already developed. The importance of this sign under such conditions resides in the increased success with which surgical intervention for perforative peritonitis is being attended when the operation is undertaken early, before the inflammation of the peritoneum is too extensive or the constitutional disturbance too profound.

That leucocytosis, like other diagnostic aids is, however, not an infallible guide in this connection, is shown by several observations of more than ordinary interest, recorded by Dr. Colin K. Russell,[1] from the medical clinics of the Montreal General and Royal Victoria hospitals. He reports one case presenting doubtful signs of perforation of the bowel with a leucocytosis of 28,000, in which operation was performed, a perforation found and sutured and recovery followed. In a second case, in which definite signs of perforation were present, with a leucocytosis of 12,000, operation was likewise undertaken, the bowel sutured and recovery ensued. In a third case, on the other hand, in which classic symptoms of perforation developed, the colorless blood-cells numbered only 6100 and 4800 in two examinations at intervals of four days. Operation was undertaken, the ruptured bowel sutured, but the patient succumbed. In a fourth case in which pain and rigidity developed in the abdomen, chiefly in the left lower quadrant, a leucocytosis of 16,000 was found on one occasion and one of 13,000 on another. Operation, however, failed to disclose any indication of perforation or peritonitis. The wound was closed and healed without complication, the patient recovering promptly. The colorless blood-corpuscles averaged in three counts after the operation less than 10,000. A fifth case was attended with pain in the right iliac fossa, of sudden development and progressive intensity, and gradually developed rigidity, marked tenderness and distention and 17,000, 14,000 and 10,500 leucocytes to the cubic millimeter on three occasions. On operation no perforation was found, although two of the ileocecal glands were unusually tense and swollen. The wound was closed and the patient made an uninterrupted recovery. In a sixth case pain developed suddenly in the left hypochondrium, with tenderness on pressure, but without rigidity or tenderness elsewhere. The pulse remained unaltered, but the leucocytes were found to number 12,000 to the

1. Boston Med. and Surg. Jour., April 18, 1901, p. 374.

cubic millimeter. The general condition grew worse, some tenderness developed also in the right iliac fossa and the pulse became accelerated. On repeated examination the colorless blood-corpuscles numbered 12,000 to 14,000 per cubic millimeter. On account of the doubt operation was deferred, but sudden collapse developed, with signs of peritonitis, vomiting, rigidity, great tenderness and rapidity of pulse. The colorless blood-corpuscles now numbered 32,000. Operation was undertaken, but the patient succumbed.

As a result of these experiences the following series of conclusions seems justifiable: In the presence of perforation it is a general rule for leucocytosis to occur, the degree of which, however, may vary within wide limits. The increase in the number of leucocytes, while appearing early, as a rule, may not be at all marked until general peritonitis and collapse have supervened. There may be an utter absence of leucocytosis in the presence of marked perforation and peritonitis; in fact, the number of colorless blood-corpuscles may be lower than normal. With typical signs of perforation and a definite leucocytosis, no such complication may be present, and an operation may be performed unnecessarily. A marked degree of leucocytosis may also attend complications other than perforation, for example, bronchitis, cholecystitis, etc. In the presence of pain and tenderness of the abdomen coming on suddenly in the course of an attack of typhoid fever—and in the absence of evidences of cholecystitis or other definite complication—and of a distinct leucocytosis, even without other symptoms of perforation, an exploratory operation is justifiable, even advisable, thereby obviating the danger of a fatal issue from too great a delay.

THE CLINICAL PICTURE NOT ALWAYS SUFFICIENT FOR DIAGNOSIS.

For some time the opinion has prevailed that the typical clinical picture of an infectious disease corresponds to the activity of a single typical organism. The clinical picture of many infectious diseases is usually a characteristic one, reappearing with satisfactory regularity in various epidemics and in isolated instances. Hence it would seem quite logical to conclude that diseases of this character always are caused by the same specific organisms. But the relations between the clinical picture of disease and the cause of disease are probably not as simple as apparent at first sight. As pointed out by Petruschky,[1] in a consideration of this question, the peculiarities of pathogenic organisms and of the individual patients modify greatly the relations between cause and disease as presented by the clinical picture. The varying virulence of the organisms and the varying susceptibility of the animal and human beings naturally lead to often great variations in the clinical manifestations. The comma bacillus does not cause severe cholera in all persons; there are mild forms of cholera, and comma bacilli may pass through the intestinal canal without causing any noticeable symptoms. Not only may diphtheria bacilli persist in the throat for long periods after an attack of diphtheria, but the bacilli may be found in healthy persons who have not had diphtheria, and the bacilli may be so persistent that it is practically impossible to remove them for good. After recovery from typhoid fever the typhoid bacillus may persist in the urine in enormous numbers even for years. These examples, and others are not hard to find, show that the active cause of a disease may be present, but not the disease.

On the other hand there may be present the clinically typical picture of a distinct infectious disease without its specific organism being present. Such cases are cleared up only by means of the most searching bacteriologic study. "Cholera nostras" may present the identical symptoms of Asiatic cholera, but it is not Asiatic cholera etiologically. Certain streptococcus infections of the throat reproduce perfectly the clinical picture of genuine bacillary diphtheria, and Petruschky claims that croupous pneumonia may be caused by a variety of organisms, especially streptococcus longus and Friedländer's bacillus. In this case, however, it is always possible that the pneumococcus may have escaped detection. Pleuritis, peritonitis, cystitis, cerebrospinal meningitis, etc., may be caused by various different bacteria, the clinical and even the anatomical pictures being quite alike. The clinical differentiation of typhoid fever is difficult. It took a long time before it was separated from other fevers. Miliary tuberculosis and meningitis are even now distinguished from typhoid with great difficulty, the definite diagnosis at times being made only after careful bacteriologic examination. Recently it has been indicated that other bacteria than the typhoid bacillus, namely the so-called para-typhoid bacilli, may produce the clinical symptoms and signs of typhoid fever. As has recently been made clear, dysentery may undoubtedly be caused by several different micro-organisms.

One conclusion that may be drawn from the foregoing considerations is that, strictly speaking, the recognition of the clinical picture of an infectious disease is not always sufficient for its diagnosis. The clinical picture owes its existence to the infecting agent. The clinical examination as ordinarily done can not possibly reveal with certainty the cause of the clinical and anatomical disturbances, and it must be accepted that bacteriologic examination is essential for the scientific diagnosis of an infectious disease. In order to emphasize this aspect of diagnosis Petruschky urges the introduction of an etiologic nomenclature. An exact nomenclature would spur to renewed study and to bacteriologic examination in order to establish exact etiologic diagnosis. Streptosis, staphylosis, spirillosis, plasmodiosis, bacillosis are some of the terms he suggests, which may be modified in various ways to meet the special indications. It is a well-known fact that our nomenclature can not be changed through the spasmodic efforts of any one

1. Zeitschrift f. Hyg. u. Infectionskr., 1901, xxxvi, 151.

reformer, be the reasons ever so just. And yet we believe that all thoughtful physicians are in hearty sympathy with all effort that tends to make diagnosis more definite, and out of this feeling there may in time spring a more precise terminology than the present.

THE ASSOCIATION OF AMERICAN PHYSICIANS.

The sixteenth annual meeting of this medical body, just held in Washington, D. C.—where all its meetings are held—seems to have been exceptionally successful from the point of attendance as well as in the scientific program and discussion. In the president's address, Dr. William H. Welch, of Baltimore, made the significant observation that the day for formal addresses before bodies like this had passed. It would be well if this sentiment became more general, because much valuable time is consumed in the delivery, and much valuable space in the printing, of introductory addresses of but little real value. Dr. Welch emphasized that while the opportunities for research in the more technical branches of medicine at present are unexcelled in this country, yet scientific work of an advanced character in clinical medicine had not developed as much as might be wished. As has been pointed out in the columns of THE JOURNAL,[1] the majority of our large hospitals are not yet organized in such a way as to render the proper sort of post-graduate work in clinical branches practicable and inviting. Dr. Welch recommended the introduction of the system of hospital residents as an important step toward the development of clinical post-graduate work. The essential point is that under the hap-hazard and too frequently political methods of appointing hospital staffs no regular, systematic plans for training young men in clinical medicine have been developed.

Many papers worthy of special note were presented and discussed. The work of Dr. Reed[2] and his associates on the etiology of yellow fever, the main facts of which are now quite generally known, has been corroborated and supplemented by more recent investigations, the results of which were presented at the meeting by Dr. Reed. It seems to be definitely settled by these researches that the cause of yellow fever is present in the blood of those attacked, that it is inoculable by certain mosquitoes, and that it is not transferable by fomites. Hence a large part of the mystery of the etiology of yellow fever has been removed, and the remark, in the discussion of Dr. Reed's presentation, that next after the discovery of anesthesia these demonstrations in the etiology of yellow fever are the most important medical discovery made in this country, is probably not at all an extravagant statement.

Dr. Billings's remarks on the progress of pernicious anemia, as illustrated by the course of the twenty cases reported by him at the meeting in 1900, were received with interest. Longer periods of improvement than ordinarily taught have been observed, and also the fact that with decided exacerbation in the condition of the patient large numbers of nucleated red blood-cells appear in the circulation. The spinal cord lesions of pernicious anemia were also discussed.

The demonstrations of specimens of experimental and spontaneous acute and hemorrhagic pancreatitis by Dr. Flexner and Dr. Opie are noteworthy because it was shown that the disease may be studied experimentally, and especially because Dr. Opie's specimens illustrated the intimate relation that appears to exist between pancreatitis and calculi in the ampulla of Vater.

Dr. Herter presented important work on the relation of acid intoxication to the development of diabetic coma. By special chemical methods the amounts of organic acids in the urine, especially di-acetic and B oxybutyric, may be measured accurately. In diabetes the amounts of these acids may increase to such an extent that they are not neutralized by bases. Such increase precedes and coincides with diabetic coma, so that the methods offered afford a practical method for recognizing the onset of this most dangerous complication. Sugar determinations alone have no particular prognostic significance.

Finally mention may be made of the fact that the members of the recent commission sent by the authorities in Washington to investigate the plague in San Francisco gave a summary of the results of their investigations. With these the readers of THE JOURNAL are familiar already. The great value of the work of the Commission was freely recognized.

The foregoing may serve to indicate the high character of the work of this meeting of the Association, a more detailed account appearing in our Society Reports.

1. April 13, 1901, p. 1048. 2. JOUR. A. M. A., February 16.

A CORONER ON DOWIEISM.

The verdict of a Cincinnati coroner[1] in the case of a girl who died under Dowieite neglect is worth quoting from. After giving the history of the case and the cause of failure of their treatment as given by the Dowieites, viz., that it was due to disobedience in not perfectly using the light which they claimed she had received from God, he says: "Their explanation, if it reflects the teachings of their church, implies the existence of an angered Deity, who refused the petition for restoration to health to a smitten child because of a fancied disobedience. Such doctrine is unnatural and unmerciful; it destroys the solacing influence of prayer and makes religion the merest travesty." He then goes on to say that while the state does not dictate the treatment of the sick, it favors the calling in of men of skill and science whose efforts have arrested the spread of disease, and pleads, for the sake of those afflicted, the use of human aid, which he says has more in it of religion in these cases than all the prayers for the repetition of the miracles of Scripture. It is a pity he could only plead, and did not hold for some punishment the false teachers and inhuman parents who claimed to see a just punishment of the victim in the results of their own cruelty and neglect.

1. Lancet-Clinic, May 4, 1901.

A DISHONEST REFERENCE.

We recently printed, in the Current Medical Literature Department of THE JOURNAL, a brief abstract of a paper—from the pen of a Chicago physician—on medical advertising, that appeared in a leading eastern medical weekly. The abstract baldly reproduced some of the more striking opinions and some of the criticisms, made by the writer, of the advertising methods by which the spirit of the Code of Ethics is evaded and its provisions surreptitiously violated. We are somewhat shocked and surprised to find this abstract quoted *verbatim* as an expression of opinions in a "review of a current medical literature article" by "the highest ethical authority of the country," in an alleged quotation from the remarks of a disgruntled Leadville physician. The flagrant dishonesty of such use of a simple uncritical résumé of a published paper is self-evident; the supposition that it was honestly taken as the expression of opinion in a "review" is too untenable.

THE HOLMGREN TEST.

In the text-books on ophthalmology the Holmgren test for color-blindness is generally mentioned as the most satisfactory and practical; in some of them other tests are scarcely even mentioned. The efficacy of the worsteds has become as it were an established dogma of ophthalmology, that it is almost heresy to question, and any mistake or even hesitation in sorting them is held to be enough to establish the existence of an irreparable color defect. Dr. Edridge Green, however, is one of the heretics, and in a recent article[1] he reiterates his views and quotes a number of authorities to show that he is in respectable company. It is not his object, he says, to point out in what ways the test is defective, as he has done that elaborately enough elsewhere, but to quote the similar views of others, including some of those who had hitherto opposed him. Among these are Dr. Anderson Critchett, the president of the British Ophthalmological Society, Mr. T. H. Bickerton, one of the former advocates of the test, Dr. Karl Grossman, St. Clair Buxton and others, and he points out internal evidence of its insufficiency in the report of the Committee of the Royal Society, on the basis of which it was adopted by the Board of Trade. In its summary of cases detected it includes five where the wool tests failed, but none that passed all the lantern tests; hence the presumption of the superiority of the latter. While he is convinced that Holmgren's test causes the rejection of many normal sighted persons, and that three divisions of the dangerously color-blind nearly always escape detection by it, Green only asks for a renewed careful and unbiased inquiry. It is a reasonable demand and should be acceded to, and there is unquestionably good reason for it. The Holmgren test certainly is about as far as possible from reproducing the actual conditions where color vision is demanded, and this alone should be an efficient argument against it. A test on which the safety of the public may depend, to say nothing of justice to the individual tested, should be reliable beyond reasonable criticism. It should take into account quantity as well as quality of color vision, and should fairly meet all the actual conditions where a perfect sense of color is required. There are so many points in regard to color vision yet unsettled that any dogmatic adherence to a questioned method would seem like the worst kind of false conservatism.

1. The Lancet, April 13.

SOME ODDITIES IN SUICIDE.

A young man, an ardent advocate of "Christian Science," recently committed suicide rather than be prescribed for by a physician. It is one of the anomalies apparently of that special sort of faith, that it has no confidence in itself in competition with medical practice. If a physician gets the case it would seem that "Christian Science" or Dowieism goes to the wall in the belief of their adherents. Hence the suicide, and the general opposition they have always shown to medical interference. Disease does not exist, according to Mrs. Eddy, but apparently the baleful action of drugs or even of a physician's advice is a reality. Like the victim of persecutory delusions, who kills himself for fear of death, such "Christian Science" paranoiacs commit suicide actively or passively for fear of medicines. Unfortunately the most of them are only too ready at all times to commit homicide on some unfortunate babe or irresponsible invalid. Another case of attempted suicide of some medical interest in its sequelæ is reported in the newspapers. A millionaire finding life burdensome cut his throat, it is said, "in an earnest and painstaking manner." A physician, called in by outsiders, sewed up the wound and saved his life. When he sent in his bill, however, there was trouble; not only was it considered exorbitant, but there was no authorization for the services rendered; they were uncalled for and unwelcome, and being thus gratuitous in one sense should be so in the other. The defense certainly would have been good for most services thus bestowed, but the case did not come to trial, being finally settled out of court. It is unfortunate in some respects that the medicolegal questions involved could not have had a judicial decision, such for example as the right to claim a fee for professional services demanded as an act of humanity or to prevent crimes. Suicide, if we are not mistaken, is or has recently been a felony under New York law and the defendant here may have had reason for not wishing this point to be too much elaborated. The case is an interesting one at least in its suggestiveness.

PESTIS MINOR.

A suggestion that will carry the more weight as coming from the editorial columns of the *Journal of Tropical Medicine*, for April 15, is at first sight a little startling. It is that we have occurring in various civilized communities occasional cases of a disorder at least closely allied to true plague. The writer gives the account of a case, with bacteriologic examinations, that occurred in a European hospital, so far as could be ascertained, without any history or suspicion of contact with plague cases. He classes this case as pestis minor, with a bacillus allied to that of true plague, and says: "What are we to infer from this and other cases which have occurred? The conclusion seems obvious, namely, that in Europe at the present moment sporadic cases

of pestis minor are occurring which are unrecognized and excite no suspicion of their true nature. We have become familiar with the term 'glandular fever' of late years, and it is possible that the illnesses of many children with febrile symptoms and general adenitis are being grouped under this head, which, were they as carefully tested as the boy referred to in this article, would exhibit bacteriologic indications justifying their being placed in the plague category as pestis minor." If, as the writer says, plague may exist in a sporadic form and pass unrecognized, the idea that there are unpleasant possibilities where they are perhaps least suspected is hardly avoidable. It is true, he claims that pestis minor is a fairly well-defined ailment that may precede, run concurrently with or continue after true plague as well as occur independently, and quite distinct from pestis ambulans which is only a mild form of the latter, though the two are frequently confounded. It seems also to be the case that, as in the boy referred to, the bacilli may be few in number and wanting in the virulence of those of true plague. In this we have a parallelism with certain other diseases that apparently exist in attenuated or modified forms; the question is whether this is a modified form of true plague and whether there is any possibility of its giving rise, under favorable conditions, to the more virulent type. Thus far there is no real evidence that it does, and the isolated character of such a case as the one reported would indicate no connection between the two. It is stated that no plague was known to exist in the city or even in the country where the case occurred. On the other hand, however, we can not ignore the possibilities of unrecognized cases or means of infection, and it has been charged that many unreported cases of plague have occurred in European ports. There are evidently many points in regard to the plague yet to be elucidated, and this question of pestis minor, the conditions and frequency of its occurrence, and its connection with the severer types is one of them.

Medical News.

CALIFORNIA.

Dr. **Albert H. Taylor**, San Francisco, has sailed for Europe. He will take post-graduate work in Vienna.

Cooper **Medical College**, San Francisco, graduated a class of 27, April 23. Rev. Bradford Leavitt delivered the address to the class, on "A Man's Duty to His Mind."

Health Officer Dr. John A. Colliver, San Bernardino, resigned April 20, and Dr. Charles A. Mackechnie was elected in his stead. Dr. John N. Baylis was elected permanent chairman of the board of health.

French Hospital Changes.—With the change of superintendent of the French Hospital, San Francisco, certain changes in the staff have become advisable. On April 17, Dr. F. Dudley Tait was re-elected surgeon and Dr. F. P. Canac-Marquis, formerly of St. Paul, Minn., gynecologist; Dr. Marcus W. Fredrick, oculist; Dr. Martin Krotoszyner and Dr. Casimir F. Pawlicki were elected to the staff.

DISTRICT OF COLUMBIA.

Dr. **Luther H. Reichelderfer**, Washington, has been appointed superintendent of Garfield Memorial Hospital.

Howard University Medical Department, Washington, held its commencement exercises, May 8, and graduated a class of 19, which included 3 West Indians and 1 Burmese.

The Episcopal Eye, Ear and Throat Hospital, Washington, has purchased a lot for its new buildings, at an expense of $9500. The erection of the new buildings, will be begun as soon as $25,000 has been subscribed to the building fund. Of this amount more than $3500 has been already secured.

The late Dr. Samuel C. Busey, Washington, bequeathed his collection of Washingtonia to the Columbia Historical Society, and the remainder of his miscellaneous library to the Washington Free Public Library. He further directed that his medical library, instruments, and appliances be presented to some public hospital or medical association, institution, or library, on condition that the recipient provide proper rooms therefor.

ILLINOIS.

A bill has been passed authorizing the erection of a permanent hospital at Camp Lincoln, near Springfield.

The new building of the Cottage Hospital, Peoria, was saved from destruction by fire, by the timely discovery of combustibles so prepared that the building probably could not have been saved had the fire been started. It is supposed that the labor troubles which have delayed the completion of the building are responsible for the attempted crime.

Chicago.

Dr. George W. Webster has been appointed a member of the State Board of Health, to succeed Dr. M. Meyerowitz, resigned.

Dr. William T. Belfield was elected president of the American Association of Genito-Urinary Surgeons, at the meeting at Old Point Comfort, Va., May 1.

A hospital for its employees and for the residents of the vicinity is to be constructed at a cost of $50,000 by the Crane Company, at Judd Street and Twelfth Place.

The Cook County Hospital Investigation has closed. The following is the report of the grand jury: "From the evidence submitted to us we are glad to state that, in our judgment, the charges of general bad management, neglect and cruelty were not sustained."

Public Health Conditions.—These are fairly satisfactory. With the exception of measles the contagious diseases are all of a mild type and their mortality, especially that of diphtheria, is unusually low. Some increase of the influenza and pneumonia organisms is reported, undoubtedly due to the recent dry and dusty condition of the atmosphere.

Effect of Speculation.—The Department of Health says speculation is beginning to tell on the death-rate. For the week ended May 4 the deaths numbered 566, or a mortality per 1000 of 16.77 per annum. For the week previous the deaths were at an annual rate of 13.55 per 1000, and for the week ended May 5, 1900, 1498. Heart disease, pneumonia, Bright's disease and consumption accounted for 87 of the total excess of 109 deaths of this week.

Streets Should be Watered not Sprinkled.—The economy of water for public uses is peculiar to Chicago. With the most abundant supply of any large city, upward of 190 gallons daily for every man, woman and child, against an average of 118 for other large American cities and less than 40 for European cities—there are no fountains to wash and cool the air nor running streams in the gutters to catch the dust from street and sidewalk. It is little wonder that catarrh is universal and dust diseases more prevalent than elsewhere. The proposition to flush the streets into the sewers after they have been swept, says the Health Department, should be carried into effect forthwith as a sanitary measure of the first importance.

INDIANA.

Dr. W. C. Duddenhausen, Evansville, has been appointed house surgeon at the Good Samaritan Hospital, Lexington, Ky.

Important Omission.—It was discovered on May 1 that Representative Minturn's amendment to the Wood medical law, exempting from its provisions practitioners of osteopathy, electropathy, hydropathy and massage, had been cut out and does not appear in the printed acts requiring such practitioners to obtain licenses from the State Board of Medical Examiners. An investigation is in progress.

KANSAS.

Dr. Charles L. Ebnother, Downs, has been elected a member of the city council.

Smallpox.—During March 1612 cases of smallpox were reported in the state, with 8 deaths. Four new cases of the disease were reported to the Topeka Board of Health April 18. On account of the increase of smallpox in Iola, the City Board

of Health is considering the advisability of forbidding all public gatherings.

Reforms in Care of Insane.—The board of charities will divide the three insane asylums into special institutions. The new asylum at Parsons will be used for the care of epileptic patients; the Topeka asylum for incurables and the Ossawatomie institution for convalescents, or patients who can recover. Instead of erecting one large building at Parsons, it has been decided to build a number of cottage buildings, enough to hold from fifty to eighty patients each. The cost of their construction will be a little more than if one large building were erected, but the board thinks the results will justify the increased cost.

KENTUCKY.

Dr. George B. Young has succeeded Dr. H. R. Carter, in charge of the Marine Hospital, Louisville.

The new Isolation Hospital for Flemingsburg and Fleming County has been completed and now has about ten patients.

Louisville National Medical College held its thirteenth annual commencement April 10. Miss Prima A. Fitzbutler delivered an address on "Specialists."

Dr. Emmett B. McCormick, Owensboro, has been removed from the superintendency of the Western Kentucky Insane Hospital, Hopkinsville, on account of alleged improper conduct. Dr. McCormick states that he will sue those who have conspired to secure his removal and promises interesting disclosures in his final official report.

MARYLAND.

Dr. S. F. Thomas has been appointed health officer of Frederick City.

Hagerstown has three cases of smallpox in two houses. Dr. Fulton has directed the local board to vaccinate all laborers going to the town.

Baltimore.

The Health Department reports 188 deaths for the week ended May 4, an annual death-rate of 18.07 per 1000.

Suit against the city has been brought by a woman to recover $10,000 damages for alleged unskilful and careless vaccination stated to have caused paralysis in her left side.

Dr. Melvin S. Rosenthal, formerly assistant quarantine physician, has returned after a study tour of thirteen months in Europe, during which he took special courses at Berlin and Vienna.

The Maryland General Hospital, belonging to Baltimore Medical College, has been placed in charge of the Sisters of Charity, eight in number, from various convents. This will not interfere with the nurses' training school of the college.

Trained nurses are being added to the various dispensaries, to attend the physicians during examinations and operations. This is required now by the Board of Charities through which all appropriations to hospitals and dispensaries are made.

An Experiment Station.—A building for this purpose is being erected in the courtyard of the Health Department. It will be stocked with animals for bacteriologic and antitoxin experiments by City Bacteriologist Stokes, and Secretary Fulton of the State Board of Health. The experiments will be directed for the present toward observing the effects of pneumonia and typhoid fever antitoxins. The antivivisectionists have protested against it.

Baltimore Medical College.—This institution conferred the doctorate degree on a class of nine-six, April 23. The following were elected to places on the resident staff of Maryland General Hospital: Dr. E. H. Hayward, resident physician; Dr. M. MacCallum, first assistant; Dr. W. C. Abel, second assistant; Dr. J. S. Woodward, third assistant; Dr. G. H. Dill, lying-in hospital resident; Dr. H. F. Gorsuch, alternate assistant.

MISSOURI.

State Board of Health.—The governor has appointed as members of the State Board of Health, Drs. Benjamin G. Dysart, Paris; A. W. McAlester, Columbia, and Winn F. Morrow, Kansas City.

Weltmer and Kelly, the "absent" healers of Nevada, who plead guilty to practicing medicine without a license, were find $1500 each by the judge of the Federal Court, Kansas City, April 26.

For failing to report smallpox two physicians of South St. Joseph were arrested April 29, on warrants sworn out by the city physician, who attributes the spread of the disease to such neglect.

New City Hospital, St. Louis.—The building commissioner estimates that six of the fourteen buildings contemplated for the new City Hospital will be completed this year, costing $300,000. The buildings erected will be the isolation ward, two surgical wards, one surgical operating building, laundry and power house building, kitchen and employees building. These will accommodate 200 patients and 63 employees.

NEW YORK.

American Congress of Tuberculosis.—Drs. John H. Pryor, Buffalo, Frederick C. Curtis, Albany, and Alfred Meyer, New York, have been appointed delegates to represent the state at this Congress, to be held in New York City, May 15 and 16.

State Mortality.—According to the monthly bulletin of the State Board of Health, there were 11,913 deaths from all causes and a death-rate of 19.2; a decrease from a daily rate of 394 in February to one of 384. During the first three months of the year there have been 35,529 deaths, including delayed returns, a daily rate of 395, which exceeds that of the same months in 1900 by 12 deaths daily.

Increase of Insanity.—The State Charities Aid Association, in its eighth annual report, calls attention to the alarming increase of insanity in the state, altogether out of proportion to the increase in population. The average rate of increase per year is 700, and it is estimated that by next October accommodations must be provided for 2100 additional patients. There are now 22,000 dependent insane in the state. The report suggests that, in order that the insane may receive the benefit of the best medical skill at the outset, reception hospitals be established, where better opportunity would be given for careful observation and intelligent classification before distributing the patients to the various state hospitals. It proposes to establish such a reception hospital in New York City, under the charge of the Manhattan State Hospial, thus doing away with the insane pavilion at Bellevue Hospital. Eminent neurologists and alienists have already signified their willingness to serve as attending and consulting physicians to such a reception hospital if it is established in a reasonably accessible locality.

Smallpox.—The monthly bulletin of the State Board of Health says that the matter of chief interest affecting the health of the state continues to be smallpox and epidemic influenza. The bulletin states that smallpox exists in nineteen separate municipalities of the state at this time. In most of them it has no foothold and will disappear with the recovery of the initial cases. In some it has established itself widely from failure to discover the first case. From the health officer's standpoint chicken-pox is an untenable diagnosis, at this time; many prolonged epidemics would have been prevented by holding to this. "Cuban itch" is a name given to outbreaks like that of Brockport, lasting for weeks until a well-marked case has shown it to be smallpox, as it always proves to be. La grippe with eruption has also been a mal-diagnosis. The extraordinary mildness of the type of smallpox now prevailing should make health officers guarded even in the least suspicious case. Every acute eruption, papular in quality, on the hands and face, following even a slight initial fever, should be suspected and isolated. With insignificant cases come some typical cases, severe and even fatal; otherwise it might almost be ignored. There were thirty-nine deaths from small-pox during the month, two in Gloversville, the rest in New York City.

Buffalo.

Dr. George A. Himmelsbach and wife have sailed for a three-months' visit to Europe.

New York City.

Dr. Carlo Savini has been made a Chevalier of Italy, for professional services rendered to a friend of the King of Italy.

Dr. Edward W. Lambert recently left for a continental tour, to include Russia.

Dr. Roger S. Tracy has retired from the position of registrar of records in the Health Department, after thirty-one years of service in that office. He is responsible for the present system of keeping records of vital statistics in this city, a system which has been followed in others.

Edward N. Gibbs Memorial Prize Fund.—The trustees of the New York Academy of Medicine announce the receipt of $10,000 from Mrs. Sarah Barker Gibbs and Miss George Barker Gibbs, for the establishment of the Edward N. Gibbs Memorial Prize Fund, the income to be awarded triennially to the physician of regular standing, in the medical profession of the United States of America, who shall present the best original essay on the etiology, pathology, and treatment of the diseases of the kidney.

New York Pathological Institute.—In spite of indignant protests from eminent scientific men both here and abroad, politics has gained entrance to the Institute. The medical director, Dr. Ira Van Gieson, has been making strenuous efforts to secure an injunction restraining the State Commission in Lunacy from removing him from office, although the institute has no funds and has been practically legislated out of existence. The members of his staff have submitted their resignations to take effect when he is removed.

OHIO.

Dr. David **B. Steuer** and wife, of Cleveland, sailed for Europe May 4.

By the will of the late Dr. Ellis Jennings, St. Elizabeth's and Deaconess hospitals, Dayton, each receive $2000.

Dr. **Alexander J. Erwin,** Mansfield, who spent the winter in Egypt and recently has been visiting the eye, ear and throat clinics of Paris and London, has returned to Mansfield.

Dr. **Starling B. Wilcox,** assistant surgeon U. S. army, has succeeded Acting Assistant Surgeon Najib Taky-ud-Deen, U. S. Army, as surgeon of the hospital at Columbus Barracks. Dr. Wilcox recently returned from Manila, and Dr. Taky-ud-Deen is under orders for the Philippines.

Cincinnati.

The Medical College of Ohio held its commencement exercises, May 7, and graduated a class of fifty-eight.

Laura Memorial Medical College held its commencement exercises May 2, when five young women were graduated. Dr. A. H. Freiberg delivered the valedictory.

Miami Medical College held its commencement exercises May 1. A class of twenty-five was graduated. Dr. E. W. Mitchell delivered the valedictory. The meeting of the Alumnal Association was held in the evening.

Cincinnati College of Medicine and Surgery held its semi-centennial and annual commencement exercises May 1. Sixteen were graduated. Dr. W. H. Wenning delivered the valedictory. The alumni of this institution held their annual meeting in the afternoon and appointed a committee of ten to devise means for raising $30,000 for the erection of a new college building.

Prompt Action Saves Life.—Considerable interest has been aroused in this city by the prompt and commendable action of a physician. A child, about 2 years old, had swallowed at least an ounce of rather strong carbolic acid, and when taken by the mother to the hospital was then *in extremis*. The child was so young and the throat and esophagus so swollen by the acid that no tube could be passed. The doctor succeeded in passing a small catheter, and filling his mouth with olive-oil, forced several ounces of this through the tube into the child's stomach, and then sucked out the mixture, repeating the operation several times. The child has made a complete recovery and the doctor, beyond anesthesia of the mucous membrane of the mouth, was none the worse for his trying ordeal.

PENNSYLVANIA.

West Penn **Hospital,** Pittsburgh, has elected Drs. Ewing W. Day and Lawrence Litchfield, Pittsburgh, as members of its staff.

Through **the will** of Henry Amole, of West Nantmeal township, a residual legacy will revert to the Chester County Hospital and Chester County Insane Asylum.

East Side Hospital, Altoona.—A number of Altoona physicians have taken the first steps toward starting a private hospital at Altoona, and have agreed to pay $20 a month each until the hospital is self-sustaining. Among the organizers are Drs. George A. Ickes, Elmer E. Neff, Frederick H. Bloombardt: William M. Findley, Joseph D. Findley, James E. Smith and Charles W. McConnell.

Philadelphia.

Dr. **William E. Hughes,** professor of clinical medicine at the Medico-Chirurgical College, gave a reception to the medical society of the college, at his home, May 1.

A Committee of Physicians.—Provost Harrison, of the University of Pennsylvania, has appointed the following committee to assist him in promoting the welfare of the University: Drs. James Tyson, Thomas J. Yarrow, D. M. Cheston, Radcliffe Cheston, George S. Gerhard, Richard Cleeman, James Darrach, Frederick A. Packard, Edward L. Duer, William R. Dunton, Theodore Fassitt, Joseph Leidy, Charles A. Oliver, Thomas C. Potter, Charles Seltzer, Wharton Sinkler, A. P. DuSmith, Samuel Stryker, J. B. Walker and Matthew Woods.

Pay Hospital for Contagious Diseases.—Through the energetic efforts of Drs. J. Madison Taylor, George M. Gould, Edwin Rosenthal and others the pay hospital for contagious diseases will soon be a reality. The plans for the building have been made and the contract will be let within the next few weeks. Five acres of ground have been purchased. The plans call for the construction of three fireproof buildings, one each for smallpox, diphtheria and scarlet fever, and three isolated cottages, each of which shall contain four rooms for the treatment of other contagious diseases. Each ward of the hospital proper will contain twelve rooms for patients.

A Large Medical Fee.—Concerning the medical fee of Dr. Browning, noticed in last week's JOURNAL, he advises us that the $190,000 was made up of the monthly accounts rendered to the patient, and the total named was simply a total of the bills rendered. As an inducement Mr. Magee—the patient—offered Dr. Browning double his regular charges for night service, to give him exclusive attention at nights, and while the Doctor rendered his bills at regular charges each month, Mr. Magee, according to his promise, crossed out the regular charges for night service and doubled them, certifying the bills thus changed by him. By this change of his own, had the executors paid these bills, they would have paid, without public knowledge, $317,000. During the twenty-one months he was under treatment the patient received nearly 5200 hours of the Doctor's service, and nearly 3200 hours of this was attention at night.

GENERAL.

Quarantine exists against the City of Mexico, according to press reports, on account of the typhus fever prevalent there.

The Surgeon General of the U. S. Marine-Hospital Service has received a report from the chief quarantine officer of Cuba, under date of April 23, stating that there were, at that time, no known cases of yellow fever on the Island of Cuba.

The antivaccination bill that recently passed both houses has been protested against by Honolulu physicians, through the Honolulu Medical Society. A committee was appointed to ask the governor to exercise his veto.

Epidemic Among Indians.——A disease said to be similar to smallpox is epidemic among the Indians of Sitka and Baranoff Island, on which the ancient capital of Alaska is situated. Three deaths have occurred. Sitka physicians do not agree as to the nature of the disease. No case has occurred among the whites of Sitka so far. The same disease is said to prevail among the Indians of South Eastern Alaska.

CANADA.

Dr. James Stewart, of Montreal, at the meeting of the American Association of Physicians, was elected vice-president.

Montreal's civic health committee has ordered that the three hundred prisoners in the common gaol be vaccinated, as some of the prisoners slept recently in a smallpox-infected house.

Convocation Exercises were held at Dalhousie University, Halifax, on the 30th ult., when ten graduates in medicine received their degrees, one of them being a woman, the first Halifax lady to take this degree at Dalhousie.

The Longue Pointe Asylum, in the province of Quebec, has just been completed, and has accommodation for 2000 patients. The nursing staff consists of 200 sisters of the church. The cottage plan has been followed in the construction.

Montreal General Hospital.—During April, 210 patients were admitted, 190 discharged and 23 died, the greater number of deaths occurring within three days of admission. The average daily number of patients in residence was 153. In the out-door dispensary department there were 3136 consultations.

Samaritan Hospital.—This Montreal institution, in its annual report for the past year, shows 110 in-door patients. During the year 142 operations were performed, and only 5 deaths occurred, 3 of which followed operations, thus giving a death-rate of a little over 2 per cent. There were 250 out-door patients.

Smallpox in British Columbia.—In connection with the progress of the smallpox patients in the province of British Columbia, Dr. Fagan, the provincial medical health officer, reports very satisfactory progress. Dr. Fagan recently visited the Kootenays, and at Phoenix, Cranbrook, Moyle, Fernie, Michel, Nelson and Rossland there were cases of smallpox, but all necessary precautions were being taken. No general quarantine now exists against any of these towns. At the St. Eugene Mine, where one case existed, seventy-five men were isolated, but allowed to carry on their work.

The Ladies of Carberry, Manitoba, thought they would have a hospital for that town, but apparently everything is not working harmoniously as the male part of the population, the professional and business men are antagonizing the proposition, and the town council has refused any money for the purpose. The adjoining township of North Cypress voted $500 for the purpose, but hedged the vote around with such conditions that the ladies could not accept it. It will be interesting to watch who will win out in the fight, as "have a hospital we must," say the ladies, and now and again such determination means something.

Victoria Asylum for Women.—Arrangements are being rapidly made for the opening of the Victoria Asylum for Women, at Coburg, Ont., in September next. Dr. McNichol, of Coburg, has been appointed superintendent, and Dr. Harriet Cockburn, of Toronto, assistant physician, the Ontario government thus recognizing the claims of women physicians, the first instance in Ontario. Dr. McNichol has retired from private practice and is familiarizing himself with asylum work in the different asylums of the province. Dr. Cockburn has had considerable experience in hospital work, having been at one time connected with the Dakota State Asylum for the Insane.

Action of Medical Council.—Some 700 of the 2400 or 2500 doctors practising in Ontario have had their names erased from the register of the Medical Council, as reported in these columns a few weeks ago. On May 3 a deputation representing these delinquents waited on the Ontario government to protest against the action of the Council. The deputation, composed mostly of practitioners outside of Toronto, was headed by Dr. Sangster, of Port Perry, himself a member of the Council and the leading spirit in this matter some ten years ago. They claim that the profession is not properly represented on this body and hence their action in refusing to pay their annual fee of $2. As a matter of fact the Medical Council is composed of thirty members, thirteen of whom are representatives of the colleges and universities and the homeopathic body. One hundred of the delinquents have paid up in full. The balance expect that the government will have the Medical Council stay proceedings until the annual meeting of that body in July.

Contagious Diseases of Animals.—This question is receiving attention at the hands of the minister of agriculture. A bill is before the House of Commons which will amend the act respecting these diseases among animals, and will prohibit the selling or putting off of an animal suffering from infectious or contagious disease, or the meat, skin, head, horns or other part of such animal under a penalty not exceeding $200. The amendment will permit the minister of agriculture, by regulation, to exempt from the operation of this section, the meat, hide, horns, hoofs or any other part of an animal, where he is satisfied infection can not be communicated by the sale of such. A further amendment provides that where an animal has been found to be infected with any infectious or contagious disease, and such animal is afterward slaughtered while in an infected place or in quarantine, the meat of the animal may, notwithstanding anything in this act, be sold and used for human food, if previous to such sale or use it is certified by any lawfully appointed health authority having jurisdiction in that behalf, that it is not affected with such disease.

FOREIGN.

Progress of the Plague.—During the week ending April 20 in Cape Town, Africa, 46 new cases of plague occurred and 28 deaths therefrom, this making the total number of cases up to that date 449, with 182 deaths. The two following days, April 21 and 22, 7 and 12 new cases respectively were reported. In Bombay, reports for the week ending March 30 ascribe 886 deaths to plague, showing a decline in the death-rate in every district in the city. In Calcutta, on April 1 and 2, there were 127 and 162 new cases respectively, with 129 and 158 deaths. In the Patna district, in Bengal, 2529 fatal cases occurred during the week ending March 23, and there was an increase of 147 the subsequent week. Reports from Mauritius, for the week ending April 18, show 2 new cases there, with no further deaths.

PARIS LETTER.

Cocain Injections and Narcosis.

Intrarachidian injections of cocain as a means of producing narcosis are as much as ever the subject of discussion. The discussion as to their true value and as to whether they can supersede ether and chloroform has entered on a more acrimonious phase. At the meeting of the Academy of Medicine, March 19, Professor Reclus, who has always been the champion of cocain as a means of performing such operations as kelotomy and laparotomy, discussed this method. He is not in favor of it as practiced at present, and he said that in some cases one is unable to insert the needle into the rachidian space and in others the needle is stopped up, or anesthesia does not take place for some unknown reason. In others anesthesia only comes on after half an hour, or disappears after a few minutes. Untoward symptoms may be seen, such as tremulation, nausea, vomiting, seen in one out of every two or three cases, paralysis of the anal sphincter with consequent incontinence, paraplegia and intense headache lasting several days. In some cases syncope may supervene, and there have been several cases of death. If some, like those of Julliard, of Tuffier, can not be laid to the account of cocain, the same can not be said of those of Humbert, Dumont, Jonnesco, King, where the use of cocain has been the real cause of death. When one considers the small number of operations compared to the number of accidents, one is obliged to admit that it would be premature to abandon the older methods. At a meeting held a week later, Professor Laborde, who is a well-known physiologist in France, indicated the results he had obtained by observing the effects of injections of cocain on animals. There are two periods of intoxication observed: In the first there is extreme hyperexcitability, the animal trembles, is agitated and even has convulsions; the second period is characterized by analgesia without tactile anesthesia. Intrarachidian injections, when used on man, can not prove quite harmless, as they disturb the equilibrium of the intrarachidian pressure. It should be remembered that the patient does not remain quiet after the injection, and as the cephalorachidian liquid is always in motion, cocain may be made to act on the bulb and even the brain. According to Professor Laborde, this method is, therefore, a dangerous one and cocain should only be used locally.

Dr. Reclus' remarks at the Academy of Medicine caused some comment and he, therefore, wrote a letter to the *Presse Medicale*, as follows: "Some of my provincial colleagues seem to consider my report altogether too conservative. I hardly think this can be said, as I have studied the technique of the intrarachidian injections and after having tried them have found they offered most distinct disadvantages. The day they are shown to be less dangerous than the use of ether or chloroform, I shall be glad to adopt such a method." Dr. Reclus added to this a letter he had received from Dr. Bier, which is of interest as showing that the first to use these injections in Europe is not satisfied with the technique now employed. Dr. Bier writes: "I am glad to find that I agree so thoroughly with you, the master of anesthesia by cocain. Such as the method is used in France, it can not be employed. It was hardly necessary to perform 1200 operations; the first six had sufficed to enlighten me. I cannot understand such enthusiasm, which is not quenched by so many disagreeable accidents. I would advise such operators having the injections performed on themselves, as I have done, and they might then change their mind. I have abandoned my first method after this experience, but I have continued my researches with due prudence, and I believe I can now recommend a new technique which I will describe at the Medical Congress held in Berlin on the 11th of April. If, however, you should wish to have some details on this subject before then, I am ready to send you all particulars." Dr. Reclus added that he thought it wise not to keep so good a promise for himself, and ended his letter by saying that perhaps his colleagues would stop making lumbar injections, until a safe method had at last been described. Dr. Reclus's letter could not remain unchallenged, and Dr. Tuffier, who is at the head of those who use these injections in France, wrote a letter which appeared in the following number of the *Presse Medicale*.

In it he said he did not wish to answer the criticisms made against his technique, but to indicate on what ground the debate should take place. The use of cocain as indicated by Corning and Bier is dangerous. He did not find it necessary to gather together 1300 observations, the first six had sufficed. His enthusiasm would have been sufficiently calmed by the description of the technique used and of the accident which happened to the author of the process when it was tried upon himself. Dr. Tuffier adds that his own technique does not show such imperfections. His method is sufficiently simple to have obtained the favor of his colleagues in all lands, and physicians and accoucheurs have adopted it. Every day a hundred of these injections are made, and Dr. Tuffier is convinced

that they are harmless. If certain surgeons wish to perform rash operations, he can in no wise be held responsible for their failures or their scorn, but, for those who have followed out his method in all its details, he begs of them to publish their complete statistics, for which he will hold himself responsible.

Intrarachidian injections of cocain as a therapeutic agent have been tried recently by Dr. Achard, who has injected as much as 2 centigrams into the spinal column in cases of sciatica. Professor Marie, one of Charcot's best known pupils, has been trying it recently, but in smaller doses. In one case, where a man was suffering from sciatica, he injected 5 milligrams of cocain, and there was a noticeable improvement very soon after, the man being able to get up and walk about without any appreciable pain.

Congress of Neurologists.

The next congress of neurologists will be held in August, at Limoges, under the direction of Dr. Ballet, of Paris. Reports will be read on the following subjects: "Pathologic Physiology of Muscular Tonicity and its Causes;" "Modifications of Reflexes and of Contracture in Lesions of the Spinal Cord;" "Acute Delirium in its Clinical, Pathologic and Bacteriologic Aspects."

Sanatoria for Consumptive Workmen.

There exist in Germany forty-nine sanatoria for workmen suffering from consumption, but none had been founded in Alsace-Lorraine, until the president of Lorraine, the baron of Hammerstein, recently inaugurated one of these institutions at Alberschwiller. It will be followed by the opening of others. This establishment, founded by private subscriptions, is very well conceived, can receive about sixty workmen, and is furnished with electric lights and sterilizers of the latest pattern.

Blood in Pneumonia.

Dr. Prochaska, of Zurich, has been making some researches recently on the blood in pneumonia, and found the pneumococcus in all cases examined. He says the reason why so many have failed to find any is that not enough blood was examined. A fact which struck him was that in several cases the pneumococcus did not cultivate for twenty-four hours in bouillon. No other microbes were found.

Foreign Body in Trachea.

At a recent meeting of the Academy of Medicine, Dr. Piechaud, of Bordeaux, described a most interesting method he followed out in the extraction of a foreign body from the trachea in a child 3 years old. He had swallowed a nail two months before, and the latter had got fixed in the left bronchial tube on a level with the hilum, as was shown by radiography. Slow tracheotomy was performed, with narcosis, and a catheter made of soft iron was slowly pushed down the trachea and connected with a strong electromagnet. After six attempts, the foreign body was removed and the canula was suppressed two days after. The child made a good recovery.

Vermicular Oxyures in the Appendix.

At this same meeting Dr. Moty spoke of the frequency with which vermicular oxyures are found in the appendix, when removed for appendicitis. It should be noted, however, that to be able to discover them, it is necessary to open up the appendix immediately after the operation, without washing it, as in this way one can examine the parasites alive and moving about. Cold water kills and deforms them almost immediately. In three cases out of five operated on recently for severe forms of appendicitis, they seemed to be the only cause. It might therefore be said that parasiticide cathartics form the best method of treatment in such cases, and that one should intervene surgically only when one is obliged to.

Pregnancy in Smallpox.

Dr. Roger, who has charge of the smallpox service at Aubervilliers, has had occasion to treat eleven pregnant women who were delivered in his service. The children seemed to be perfectly well when born, but on taking their temperature, it was found below normal. In some cases it went down to 31, 30, and even 28 C. Three children died four, six, and eleven days after birth, having as the only symptom hypothermia and jaundice. Another showed signs of an eruption like that in scarlet fever. In the seven other cases the evolution of the disease was more complete. The elements of smallpox were seen. The temperature went up generally before the appearance of the eruption. Then four or five papules were formed, which were filled with a small quantity of turbid liquid; they dried up very fast. Death took place two or three days later. Only one child lived. Dr. Roger remarked that the symptoms observed were akin to those in rabbits when inoculated with the disease.

Correspondence.

Adhesive Rubber Dam.

CHICAGO, May 6, 1901.

To the Editor:—Dr. J. B. Murphy, in THE JOURNAL for May 4, presents an article entitled "Adhesive Rubber Dam for the Prevention of Possible Infection at the Site of Operation," in which he recommends a device invented by me, i. e., the rubber dam for protection of the skin around the field of operation. Dr. Murphy states that he has used it with gratifying results at Mercy Hospital. Since "imitation is the sincerest kind of flattery," I am accordingly highly pleased to see commendation of my method emanate from an authority so favorably known to the profession. I was somewhat surprised, however, not to find any mention of my work on this subject. After a careful perusal of Dr. Murphy's paper I therefore could but conclude that the Doctor, though he is undoubtedly a diligent reader of current medical literature, is ignorant of my work. The following few lines will give a short resumé of the memoirs I have had published in regard to protection of the skin during operation, by means of an adhesive, thin rubber dam, and reference to which may also be found in Reed's "Text-book of Gynecology" (N. Y., 1901, p. 102): "F. B. Turck covers the abdominal wall with a sheet of rubber dam," etc.

The first preliminary report on my method of protecting the field of operation appeared as the result of extensive experimental work, in THE JOURNAL, June 9, 1900. The following are quotations from this article: "The indications are therefore: 1, to prevent, as far as possible infection from the skin and contact of the skin with the hands, instruments, sponges, etc.: 2, to protect the skin from becoming contaminated by pus or visceral contents. To meet these indications I have devised an improved laparotomy sheet, made of thin rubber dam which is fitted closely to the body and is illustrated by the accompanying cut. (Fig. 1.)" "The former (rubber sheet) is so arranged as to fit closely and does not interfere with the field of operation." The article was entitled: "Improved Methods and Details in the Care of Patients During Surgical Operations," and was profusely illustrated.

The second memoir, in which I gave a lengthy and detailed résumé of the work done by others and myself, on the subject of infection of operative wound from the surrounding skin and laparotomy sheets, was presented to the Thirteenth International Medical Congress, Paris, in August, 1900, and appeared in the *N. Y. Medical Record* of August 11, 1900. In this paper a detailed description of my laparotomy was found, from which the following is quoted: "This (laparotomy sheet) is made in different sizes, each with an opening which may be placed directly over the site of incision or it can be left to be opened by the surgeon as an artificial skin."

The third paper from my pen, describing my improved laparotomy sheet, appeared in the *Philadelphia Medical Journal* of March 30, 1901, p. 622, and reviewed the experimental and clinical observations of others and myself in regard to wound infection during operation and shock: "I have shown" (continues the article, on page 623) "by my own experiments and those of other observers, that the skin of the abdomen is a source of infection. It was shown that these germs can not be removed even by our most painstaking aseptic procedures. That the microorganisms found are in a measure 'nonpathogenic,' but if the vitality is reduced by shock or otherwise, these so-called non-pathogenic microorganisms may produce infection and death. To prevent these germs from gaining access to or infecting the abdominal cavity, I described a method of covering the abdomen with an 'artificial skin' or thin rubber dam sheet that is made to adhere fast to the skin; hence, I designated the method by the appropriate name 'artificial skin.' (*New York Medical Record*, Aug. 11, 1900, p. 208). I have also had rubber sheets made, with an opening already formed, to fit closely to the body and securely fastened so that the same sheet may be used over again. For practical purposes, the artificial skin which I previously described is more simple, as all that is necessary is to take a piece of this rubber dam and

cement it to the skin like a surgeon's adhesive plaster. I have used various cements; simple bisulphide of carbon will dissolve the rubber and cause a sheet of rubber to adhere to the skin. I have had several special cements made for the purpose. A thin rubber cement is useful.: I have tried a cement made of galvanum. Rubber and balsam, when sterilized, forms a firm adhesive sterile plaster to fix the rubber to the skin. It can be easily removed. When the artificial skin is thus cemented, over the skin of the abdomen or any other operation area, it forms a perfect protection from infection and lessens the danger of shock that may result partly from the evaporation of the wet skin." Yours truly. FENTON B. TURCK, M.D.

Priority in Forward Dislocation of Mobilized Urethra.

NEW YORK CITY, May 1, 1901.

To the Editor:—Dr. C. H. Mayo's admirable article in THE JOURNAL of April 27, contains a most practical and concise review of the several operative methods of dealing with hypospadias. The Doctor gives me full credit for my new method of forward dislocation of the mobilized urethra, but he also lays himself liable to misinterpretations when he says that "Professor von Hacker devised the new method shortly afterward."

With no desire to appear as criticising Dr. Mayo's brilliant work, I avail myself of it to clear up any possible misunderstanding, and incidentally emphasize the greater sense of justice we, in America, manifest toward each other.

Literature clearly shows that I reported my first operation Oct. 4, 1897, (see Reports of the *New York Deutsche Medicinische Gesellschaft* for that date). My first article describing my operation was published in the *New Yorker Medicinische Wochenschrift* for November, 1897. My second article on the subject (illustrated), containing some minor modifications, was printed in the *New York Medical Journal*, Jan. 29, 1898. Von Hacker described my operation, as his own of course, nearly, one year after he had learned of my first publication and six months after he had received from me a reprint of my second article. That he could, and did, completely ignore the published work of a mere humble American surgeon like me is comprehensible, for there are many in Europe who "perfume" their intellect by not grasping that anything good can come from our far-off land. And when they borrow it, hide, bone, and hoofs, then they have discovered it. It seems singular, however, that no heed was paid to my operation in this country until it came back trade-marked as "made in Europe," with von Hacker's name.

That my reclamations in Germany did not bear much fruit is evident by the fact that the leading German text-books on surgery show that they were kept ignorant of the true state of affairs. One of the authors, however, wrote me that he will remedy the error. Zuckerkandl, for instance, calls the method the "Hacker-Beck," and Tillmanns brings von Hacker to the foreground, showing at the same time four illustrations of Bardenheuer, who—admirabile dictu—devised the modification of using a trocar to tunnel the glans, instead of a bistoury, as advised by me. Koenig says that "Beck advised the method first," but creates the impression that von Hacker had suggested it at about the same time. But this is not all.

How American inventions are sometimes treated abroad is best illustrated by the "Jahresbericht ueber die Fortschritte auf dem Gebiete der Chirurgie," edited by Hildebrand (page 901, 1899), where Hj. von Bonsdorff exploits this most miraculous logic: "Von Hacker and Bardenheuer invented the method of forward dislocation of the mobilized urethra, etc., at the same time Beck of New York, used a similar method. But his being published in the *New York Medical Journal*, which is *nearly inaccessible to us*, we must assume that von Hacker, Bardenheuer, and Beck (Beck always figures as a kind of tolerated appendix) invented the same method at the same time. Similar remarks were found in the *Centralblatt f. Chirurgie*, by a Russian surgeon, which, however, were refuted in this country by Fowler.

It has touched me deeply to see that my American confrères stood up against these careless statements, Fowler, Valentine, and Parham taking energetic steps, for which I take this opportunity of expressing my gratitude. That their efforts had a retrograde effect became evident by the fact that Marwedel, of Czerny's clinic at Heidelberg, followed their examples by giving an exhaustive description of my method (Ueber die Beck'sche Methode der Hypospadie-operation) in the same *Klinische Beitraege* where von Hacker made his remarkable publication. I am indebted to the author for giving me fullest credit for my method, and especially for setting down the facts about von Hacker, as they are evident from literature. From this essay it may also be seen that Czerny had performed my operation a whole month before von Hacker did it, according to the latter's own statement. If von Hacker's principles as to the rights of an inventor would be introduced in general, namely that the first imitator of the invention should be credited with it, then there would be no reason, why my method should not be properly called Czerny's or Marwedel's. Yours very respectfully, CARL BECK, M.D.

Antiseptic Treatment of Smallpox.

DETROIT, MICH, May 2, 1901.

To the Editor:—In THE JOURNAL of March 16, page 771, there is an abstract of a paper of mine. If the abstract is allowed to stand without further comment it will injure me in my claim to priority in the antiseptic treatment of smallpox. By it the medical profession might infer that I had only suggested a "local (antiseptic) method treatment," whereas the whole burthen of my endeavor as to treatment since January 14, 1895, at which time I delivered an original paper on the pathology and antiseptic treatment of smallpox, before the Detroit Medical and Library Association—has been to induce medical men to evolve a complete and perfect treatment in which antiseptic baths should be the principal and effective part employed in the management of variola.

On the same date, 1895, I originally announced the principle that the true smallpox only extends so far as the vesicular stage, and that the vesicles are simply infection-atria through which pus germs and saprophytes are intromitted to the structure of the true skin and to the general system, thereby causing septicemia and death. I then affirmed that asepsis and antisepsis of the epidermis, especially by means of antiseptic baths, would avert such calamitous results. It is my opinion that I was the first to announce this theory.

I assumed charge of the smallpox hospital at Detroit on Jan. 22, 1895, with the intention of demonstrating my theory as to the pathology and treatment of smallpox, but I found myself grievously handicapped by the assaults of the whole newspaper press in the city, and by fierce political rancor in which I was innocently but unfortunately involved. Finally I retired from my hospital position on March 10, having beeen legislated out of office by an act of the state legislature.

While in the hospital the demonstration of my proposed antiseptic treatment by baths was obviously impossible. I was compelled to limit myself to the treatment of a patient by only applying antiseptics—in the fluid form—to the hands and forearms, and subsequently wrapping them with borated cotton, all the particulars of which have been repeatedly published. The result of this experiment confirmed the truth of my theory.

On the subject of my theory and its practical demonstration, I presented a paper to the Michigan State Medical Society in 1896, and it was published in the *Medical Record*, July 18, of the same year.

A re-affirmation of my theory of the pathology and the antiseptic treatment of smallpox, together with an account of my practical work, was read before the Detroit Medical Society on November 7, 1900, and published in *The Physician and Surgeon* for January, 1901, from which your abstract was made.

It is clear to me that my avowal of my theory and of the exemplification of it, in 1895 and in 1896—and later—gives me priority as elucidating the true pathology of smallpox, and makes me the original author of what may aptly be termed the antiseptic treatment of the disease. Yours very respectfully, ALONZO BRYAN, M.D.

Association News.

The Reorganization of the American Medical Association.

At the last meeting of the British Medical Association, an active propaganda was inaugurated looking to a change in the constitution of that body. Many of the members have become dissatisfied with the governing body which is known as the Council, claiming that the latter has lost sympathy with the rank and file of the association. This was brought to a focus last summer by a proposal to increase the powers of the Council. This failed, and was followed by the appointment of a committee to consider the best means of reorganizing. The association is said to number nearly 17,000 members, but only about two-thirds of these are members of branches. Both those who favored the resolutions conferring greater powers upon the Council and those who opposed them felt that the general meetings of the association were not suitably organized for an expression of the views of the great body of members. In the last conclusion of the committee, the majority of the members of the AMERICAN MEDICAL ASSOCIATION will heartily agree. The attempt to govern this great body along the primitive lines of a town meeting has utterly failed. The failure of a parliamentary body composed of from one thousand to two thousand is apparent at every session of the AMERICAN MEDICAL ASSOCIATION in which business matters are discussed. Upon this point our English brothers seem to be practically agreed. In the report of the British association's committee it is recommended that a special body be created from the various branches of the association, who shall attend the annual meetings and have their expenses paid. They shall vote upon all matters of a medico-ethical sort, and consider all business excepting that of finance and the editorial management of the journal. The present Council is to be continued, but the number of *ex-officio* members is to be diminished; it is to act as a sort of upper house, the delegates to be created under the new rule acting as a lower house. The Council is to have the power of referendum. The voting power of the delegates is to be regulated by the strength of the division which they represent. The AMERICAN MEDICAL ASSOCIATION is sadly in need of a change in the organic law relating to the formation of the governing body. The method of representation has remained the same since the organization of the Association, at a time when the number that commonly met in its annual gatherings was not larger than one of our smaller State medical societies. At present, those state, district and county societies that are in affiliation with the Association are entitled to send one delegate for each ten members upon the rolls. It so happens that the multiplication of special societies, particularly in cities, has resulted in the same man joining several; consequently his name is counted as an individual in each separate organization. The number of delegates to which Chicago, with her numerous special societies, would be entitled would make nearly one-half the local profession who are members of local societies delegates to any meeting if they take out certificates. As a matter of fact, a large number attend without the necessary certificate, as it is almost meaningless. Should they desire to take part in the proceedings and vote on the floor of the convention, there is no difficulty in their doing so, and many do without knowing the rule that those who are delegates alone are entitled to vote. A calling of the roll is such a hopeless task that it has only been attempted once or twice in the last ten years. A method of conducting business in this way would seem ludicrous if it was proposed to initiate it, but long custom has permitted the Association to drift along without any special direction. Fortunately the drift has been on correct lines, and the necessity of change has not been forced to the front. Each year, however, the Association feels more and more the cumbersome methods which are now used, and the time is ripe for the discussion of important changes. A few years ago what was known as a business committee was organized, composed of the executive members of each section. This has disposed of much business that formerly came before the general body. The work of the committee has grown in importance, and it is found to be composed for the most part of men who are interested in the scientific work of the Association, it being composed of ex-chairmen of the sections and not those interested in the politico-ethical subjects which have formed the principal topics of debate in the general session for many years past. The present delegate system should be abandoned, as it is cumbersome and useless. Its place should be taken by a smaller body, organized somewhat upon the lines of the new committee which is to be formed in the British Medical Association. Such a smaller governing body would represent hte body of the profession. It might be composed of a single delegate from each state, his voting power being based upon the number of members residing in the state. This would create a small, compact body that would be representative of the profession. It could meet at the times of the general session and matters could be referred to it, and it could initiate legislation which was thought to be for the good of the entire Association. It need not interfere with the present committee of the sections, which would still have jurisdiction over the conduct of the meetings and scientific work, and it need not interfere in any way with the board of trustees of THE JOURNAL, who have charge of the finances and the editorial management of the publication. Such a governing body combined with the referendum would unify the Association, reduce its constitution and practice to a consistent basis, and further the interests of the Association.—*Medicine*, May, 1901.

Election of Delegates.

Delegates have been recently elected to the AMERICAN MEDICAL ASSOCIATION as follows: By the Douglas County (Wis.) Medical Society, Dr. John Specht, West Superior, and Dr. L. A. Potter, South Superior; by the Franklin County (Pa.) Medical Society, Drs. A. H. Strickler, Waynesboro; Jos. Frantz, Jr., Waynesboro; A. W. Thrush, Greenvillage; J. W. Croft, Waynesboro; and Jas. H. Montgomery, Chambersburg; by the Marion County (Ohio) Medical Society, Drs. O. W. Weeks, H. L. Uhler and A. M. Crane.

Section on Laryngology and Otology.

Address of Chairman. John N. Mackenzie, Baltimore, Md.

Remarks on the Treatment of Laryngeal Tuberculosis. P. S. Donnellan, Philadelphia.

The Treatment of Laryngitis. O. T. Freer, Chicago.

Edematous Laryngitis with Report of Case. J. S. Gibb, Philadelphia.

Types of Membranous Pharyngitis. W. E. Casselberry, Chicago.

Total Extirpation of Thyroid Gland. G. F. Cott, Buffalo, N. Y.

Foreign Bodies in the Bronchi. F. J. Quinlan, New York City.

The Manifestations of Luetic Disease in the Upper Respiratory Passages and Ear. W. Scheppegrell, New Orleans, La.

Title to be Announced. J. O. Roe, Rochester, N. Y.

Title to be Announced. Robert Levy, Denver, Colo.

Observation on Intranasal Contract and its Consequences. J. E. Schadle, St. Paul, Minn.

The Relation of the Middle Turbinate Body to Chronic Nasal Diseases. C. S. Baker, Bay City, Mich.

The Pathology of Inflammation of the Posterior Part of the Nasal Septum. J. L. Goodale, Boston.

Asthma as a Result of Nasal Conditions: Treatment, etc. J. H. Farrell, Chicago.

The Effect which the So-called "Catarrhal" Disease of the Nose and Throat may Have upon the General Health. C. M. Cobb, Lynn, Mass.

Empyema of the Frontal Sinus. E. Fletcher Ingals, Chicago.

Diseases of Accessory Sinuses. E. L. Shurly, Detroit, Mich.

Anomalies of the Frontal Sinus and their Bearing on Chronic Sinusitis. Redmond W. Payne, San Francisco, Cal.

Carcinoma of the Nasopharynx. Chevalier Jackson, Pittsburg, Pa.

Sarcoma of Nasal Passages, with Report of Case. Dunbar Roy, Atlanta, Ga.

Case of Epithelioma of Upper Respiratory Tract. S. A. Oren, Lanark, Ill.

The Supratonsillar Fossa. J. Homer Coulter, Chicago.

An Unusual Anomaly Affecting the Faucial Tonsil. George L. Richards, Fall River, Mass.

Traumatic Affections of the Uvula. H. Seymour Oppenheimer, New York City.

The Pathology of Adenoids in the Adult. A. T. Mitchell, Vicksburg, Miss.

The Diagnosis and Treatment of Mastoiditis. E. B. Dench, New York City.

Mastoiditis after Subsidence and without Recurrence of Tympanic Disease. Hiram Woods, Jr., Baltimore, Md.

Experiments on Fresh Cadaver in Relation to Suppurative Otitis Media and Mastoiditis. F. C. Todd, Minneapolis, Minn.

Gelles's Test. Norval H. Pierce, Chicago.

Report of a Case of Suppuration of the Parotid Gland with Suppuration of External Auditory Canal. F. A. Packard, Philadelphia.

Report of Case of Unusual and Interesting Tertiary Manifestations. G. Hudson Makuen, Philadelphia.

Dangerous Hemorrhage after the Removal of Enlarged Tonsils and Adenoids, with Report of a Case. A. C. Getchell, Worcester, Mass.

The Rationale and Technic of Pneumatic Aural Massage. B. Alex. Randall, Philadelphia.
Title to be Announced. C. W. Richardson, Washington, D. C.

Section on Pathology and Bacteriology.

TUESDAY, JUNE 4—2 P. M.

Giant Cell Embolism of Pulmonary Capillaries. Alfred S. Warthin, Ann Arbor, Mich.
Effect of Direct, Alternating and Tesla Currents and X-rays on Bacteria. F. Robert Zeit, Chicago.
Demonstration of Specimens, Slides and Photomicrographs of Uretero-intestinal Anastomosis. F. Robert Zeit, Chicago.
Primary Sarcoma of the Esophagus and Stomach. William Travis Howard, Jr., Cleveland, Ohio.
Demonstration of the Van Gehuchten-Nelis Histologic Reaction for Hydrophobia, and Remarks on Hydrophobia in Ohio. A. P. Ohlmacher, Gallipolis, Ohio.
A Case of Complete Agenesia of the Central Visual System. Wm. G. Spiller, Philadelphia.
Carcinoma of the Lung. E. R. Le Count, Chicago.
The Influence of Structure and Locality on Pathologic Processes. J. S. Foote, Omaha, Neb.

WEDNESDAY, JUNE 5—9 A. M.

DISCUSSION ON THE ROLE OF CERTAIN OF THE NONGRANULAR AND GRANULAR SOMATIC CELLS IN INFECTION.

Technics. The Origin, Fate and Significance of these Morphologic Elements. H. F. Harris, Atlanta, Ga.
The Plasma Cells in Acute and Chronic Infection. W. T. Councilman, Boston.
The Endothelial Cells in Acute and Chronic Infection. E. R. Le Count, Chicago.
The Eosinophilic Cells in Acute and Chronic Infection. Maximilian Herzog, Chicago.
The Mast Cells in Acute and Chronic Infection. Herbert U. Williams, Buffalo, N. Y.
Isolation of Bacillus Typhosus from Unusual and Interesting Localizations. O. McDaniel, Minneapolis, Minn.
Notes on the Bacteriology and Morbid Histology of Cerebrosinal Meningitis. L. B. Wilson, Minneapolis, Minn.

WEDNESDAY, JUNE 5—2 P. M.

Report on Cultures from Two Cases of Dysentery. F. F. Westbrook, Minneapolis, Minn.
A Study of a Fetal Stomach with Special Reference to the Origin of Acid-Secreting Cells. W. A. Evans, Chicago.
Report of a Case of Hypernephroma of the Kidney. W. A. Evans and Wm. Becker, Chicago.
Some Studies of Venoms and Antivenin. Joseph McFarland, Philadelphia.
Some Unusual Adenocarcinomas of the Breast. J. Clark Stewart, Minneapolis, Minn.
An Undescribed Abnormality of the Bile-Ducts. J. Clark Stewart, Minneapolis, Minn.
Reports of a Case of Primary Carcinoma of the Appendix, and a Case of Lymphosarcoma of the intestine, with a Discussion of the Etiology of the Latter. S. M. White, Minneapolis, Minn.
On the Etiology of Carcinoma. G. Fütterer, Chicago.
On the Growth of Epithelium. Leo Loeb, Chicago.
On the Nature and Significance of Granular Degeneration of Red Corpuscles. Alfred Stengel, C. Y. White, and William Pepper, Philadelphia.

THURSDAY, JUNE 6—9 A. M.

Study of an Epidemic Among Guinea-pigs in the Laboratory. V. C. Vaughan, Ann Arbor, Mich., for Louis M. Gelston.
The Influence of Boric Acid and Borax on Milk Bacteria. V. C. Vaughan, Ann Arbor, Mich., for William H. Veenboor.
The Influence of Formaldehyde on Milk Bacteria. V. C. Vaughan, Ann Arbor, Mich., for Arthur J. Hood.
Streptothrix Infections of Human Lung: a General Consideration of the Subject. Simon Flexner, Philadelphia.

Section on Cutaneous Medicine and Surgery.

TUESDAY, JUNE 4—2:30 P. M.

Address of Chairman: Ancient and Modern Conception of Syphilis. William L. Baum, Chicago
The Relations of the Menstrual Function to Tertian Diseases of the Skin. L. Duncan Bulkley, New York City.
Pathology and Treatment of Cutaneous Cancer with Special Reference to its Non-parasitic Nature. M. L. Heidingsfeld, Cincinnati, Ohio.
The Increasing Prevalence of Contagious Skin Diseases. Henry W. Stelwagon, Philadelphia.
Syphilis and its Relations to Blastomycetic Dermatitis. Henry G. Anthony, Chicago.
Adenoma Sebaceum of the Non-symmetrical Type of Darier. William S. Gottheil, New York City.
Notes on a Case of Keratosis Follicularis (Psorospermosis). Joseph Zeisler, Chicago.

WEDNESDAY, JUNE 5—2:30 P. M.

Lantern-Slide Demonstration on Skin Cancer. M. L. Heidingsfeld, Cincinnati, Ohio.
Lantern-Slide Exhibition Showing the Clinical, Pathological, and Bacteriological Features of eleven Cases of Blastomycosis of the Skin. James Nevins Hyde and Frank Hugh Montgomery, Chicago.
Lantern-Slide Demonstration of the Exanthemata, from Original Photographs. William Thomas Corlett, Cleveland, Ohio.
Demonstrations of Case: Lupus Erythematosus Treated by Hot Air. A Case of Leprosy in a Man Born in, and Who Has Never Been Outside of Minnesota. Burnside Foster, St. Paul, Minn.
Epidermolysis Bullosa Hereditaria. Louis E. Schmidt, Chicago.
Report of a Case of Epithelioma of Long Duration and Beginning in Early Manhood. William Frick, Kansas City, Mo.
Notes on Recent Cases of Extragenital Chancres. L. Duncan Bulkley, New York City.

THURSDAY, JUNE 6—2:30 P. M.

Squamous Erythroderma. Augustus Ravogli, Cincinnati, Ohio.
Phototherapy in Cutaneous Medicine. A Preliminary Communication. William S. Gottheil, New York City.
Lichen Hypertrophicus. David Lieberthal, Chicago.
Feigned Skin Diseases. George W. Davis, Kansas City, Mo.
Clinical Features of Blastomycetic Dermatitis as Observed in Three Cases by the Author. A. W. Brayton, Indianapolis, Ind.

New Members.

The following is a list of new members for April:

ARKANSAS.

Stark, L. R., Little Rock.
Dibrell, E. R., Little Rock.
Richter, Arthur J., Pine Bluff.

CALIFORNIA.

LeDoux, Jos. Alphonse, Los Angeles.
Church, B. F., Los Angeles.

CONNECTICUT.

Park, Chas. Edwin, New Haven.
Miles, Henry S., Bridgeport.

GEORGIA.

Smith, Jefferson Gilbert, McDonough.
McAfee, John C., Macon.

ILLINOIS.

Newcomb, W. K., Champaign.
Wells, Harry Gideon, Chicago.
Rideout, Wm. J., Freeport.
Williamson, Geo. L., Homer.
Ludewig, Wm. H., Rock Island.
Grinker, Julius, Chicago.
Sims, Jas. M., Crab Orchard.
Jaquith, Walter A., Chicago.
Beam, Wm. O., Moline.
Fair, Jno. F., Freeport.
Beal, Albert M., Moline.
Wood, Chas. M., Chicago.
Morton, John B., Ridgefarm.
Miller, G. E., Hanover.
Hutchins, Linda Krape, Orangeville.
Strohecker, Samuel Martin, Chicago.

INDIANA.

Etta, Charles, Summitville.
Furniss, H. W., Indianapolis.
Rietz, P. C., Evansville.
Winans, Henry M., Muncie.
Newman, Miles N., Ossian.
Wilson, Hubert W., Michigan City.

IOWA.

Cole, J. F., Oelwein.
Lewis, Eugene R., Dubuque.
Nims, Chas. H., Cedar Falls.
Hofstetter, Geo., Lyons.
Fairchild, David S., Jr., Clinton.
Embree, Ed., Winterset.
Oliver, A. J., Muscatine.
Wertz, J. B., Marion.
Sartell, Erasmus N., Harper's Ferry.
Walker, H. L., Cedar Rapids.
Grimwood, Walter H., Ft. Madison.
Braunwarth, Emma L., Muscatine.

KANSAS.

Lowdermilk, R. Claude, Galena.

KENTUCKY.

Garland, Sherrill J., Louisville.
Johnson, Eugene Yates, Louisville.
Moore, Geo. W., Ashland.

MAINE.

Lincoln, Jas. Otis, Bath.

MARYLAND.

McCrae, Thos., Baltimore.
Barrett, H. G., Baltimore.
Cullen, Thos. S., Baltimore.

MASSACHUSETTS.

Wheeler, Emma H., New Bedford.
Comey, Perley P., Worcester.
Goodwin, J. J., Clinton.
Underwood, Geo. B., Gardner.
Parker, Ralph N., Lowell.

MICHIGAN.

Dockery, M. F., Sagola.
Dewar, John B., Cedar Springs.
Tutton, Henry V., Benton Harbor.
Willis, Geo. H., New Troy.
Sowers, Chas. Newton, Benton Harbor.

MINNESOTA.

Gillett, Arthur I., St. Paul.
Kelly, B. W., Aitkin.
Lewis, J. M., Minneapolis.
Dampier, C. E., Crookston.
Bettingen, J. W., St. Paul.
Bacon, Russell S., Montevideo.
Wilson, Wm. F., Lake City.
Heise, W. F. C., Winona.
Coulen, B. M. J., Owatonna.
Cool, Daniel M., Faribault.

MISSOURI.

Stauffer, Wm. H., St. Louis.
Zwart, B. H., Kansas City.
Stapleton, Fielding P., Albany.
Bowline, Benj. F., Bagnell.
Deutsch, Wm. S., St. Louis.

MISSISSIPPI.

Martin, Edw. Hamilton, Clarksdale.
McElroy, Jas. B., Stovall.

NEBRASKA.

Peterson, Alfred O., Omaha
Wood, Ruth M., Lincoln.
Mattice, Richard L., Omaha.

NEW YORK.

Becker, Edouard Waterbury, Troy
Jones, David Hughes, New York City.
Otto, Jacob S., Buffalo.
Schminke, Jno. C., New York City.
Murphy, John, New York City.
Metzger, J. I., New York City.
Carlisle, Robt. Jas., New York City.
Ross, John, New York City.
Jelliffe, Smith Ely, New York City.
Jarecky, Herman, New York City
Probasco, E. B., Glens Falls.
Wells, Jos. E., Brooklyn.
Livingston, Alf. T., Jamestown.

NEW MEXICO.

Crossen, Francis, Albuquerque.

NEW JERSEY.

Richardson, Emma Miller, Camden.

OHIO.

Obrist, J. W., Beaver.
MacMillan, Wade, Cincinnati.
Cadawallader, J. C., Cincinnati.
Phillips, Jas. McIlvaine, Columbus.
Husted, Eugene G., Bearnsville
Bradford, Wm. N., Cambridge.
Brown, Mark A., Cincinnati.
Gillespie, Paul, Wyoming.

OKLAHOMA.

Holbrook, Ralph W., Perkins.

TENNESSEE.

Kane, Elizabeth C., Memphis.
Moore, Alfred, Memphis.
Burke, Robert A., Dyersburg.

TEXAS.

Hathcock, Alf. L., Palestine.
Ferguson, Aug. D., Emmet.
Stephens, Ernest L., Ft. Worth.
Alexander, C. M., Coleman.
Simpson, Chas. W., Waxahachie.

PENNSYLVANIA.

Bonebreak, John S., Martinsburg.
Clark, John, Smethport.
Pfaltzgraff, S. K., York.
Bishop, Frederick J., Scranton.
Ravenel, Mazück Porcher, Phila.
Knipe, Reinoehl, Norristown.
Morris, A. F. B., Pittsburg.

RHODE ISLAND.

Peckham, Frank E., Providence.

VIRGINIA.

Plecker, W. A., Hampton.
Feild, Edw. Evarard, Norfolk.
Old, H., Norfolk.
Jones, Herman Ewart, Roanoke.

VERMONT.

Twitchell, Marshall C., Burlington.

WASHINGTON.

Loe, A. O., Seattle.
Blalock, Nelson G., Walla Walla.

WISCONSIN.

O'Connor, D. J., Green Bay.
Hewitt, M. R., Milwaukee.
Cutler, John C., Verona.

Report of Committee on Transportation.

The Committee on Transportation reports that the following rates and time limits have been granted to the AMERICAN MEDICAL ASSOCIATION, the Military Surgeons of the United States, and the American Academy of Medicine, which meet between May 30 and June 7.

The Western Passenger Association has granted throughout its territory, including Colorado and Wyoming, a one fare plus $2 for the round trip from all points beyond 200 miles of St. Paul; from all points within that radius a fare and a third for the round trip will apply. Tickets will be on sale from points 200 miles and over from St. Paul, May 27 to June 3, inclusive; from points within 200 miles, tickets will be on sale from same date to June 4 inclusive. Returning tickets will be honored from May 29 to June 15, with extension as herein explained, tickets both ways to be used for continuous passage only, in either direction. Form of ticket will be of iron-clad signature form, providing punch description of passenger. Return ticket is to be executed by joint agent at St. Paul upon payment of a 50-cent fee to be used at all points from which the local one-way rate to St. Paul is more than $6. From points within that radius open form of local excursion ticket is to be used. Exchange orders require execution by joint agent. Extension, return limit of ticket sold at points from which local one-fare rate to St. Paul is more than $6, may be extended to leave St. Paul up to and including July 15, 1901, by depositing tickets with joint agent not earlier than May 29 nor later than June 15, and upon payment of execution fee at the time of deposit, all other conditions to remain unchanged. The Committee is trying to secure a stop-off privilege at Milwaukee, June 11-14, for the Neurological Society.

The Central Passenger Association so far has granted a rate of one fare and a third on the certificate plan, but have not decided on date of sale or time limit of ticket. Your Committee is urging the adoption of the time limit granted by the Western Association and a Milwaukee stop-over. Further action in this association will be published in THE JOURNAL.

The Southeastern Passenger Association, up to this date, May 4, has come to no decision on the question of rates.

The Trunk Lines Association has granted a rate of one and a third fare on the certificate plan, out-going tickets to be sold May 25 to June 5, inclusive. Tickets must be deposited with railroad special agents at St. Paul promptly on arrival, together with the certificate secured when ticket is purchased; return ticket will be issued not later than June 11 on presentation of certificate duly signed at the meeting by the local transportation committee and special agent of the company upon payment of one-third the regular first-class fare; certificates or return tickets are not transferable; railroad certificate obtained at the time out-going ticket is purchased must invariably be presented for reduction in rate on return ticket. The Committee is urging the adoption by the Trunk Lines Association of the time limit agreed to by the Western Passenger Association. We are also urging the stop-off privilege at Milwaukee June 11-14 and the Trunk Lines Association has submitted this question for final decision to Mr. Eben E. MacLeod, chairman of the Western Passenger Association, for final decision.

The New England Passenger Association has granted a fare and a third for the round trip, certificate plan. Tickets will be on sale May 25 to June 5 inclusive; tickets returning sold on presentation of certificate in proper form not later than June 11; continuous passage over same route is required in all cases. Your Committee is urging upon them the importance and necessity in the interest of the St. Paul Meeting the adoption of the time limit granted by the Western Passenger Association. All rates quoted apply jointly to the meetings of the Military Surgeons of the United States, the American Academy of Medicine and the AMERICAN MEDICAL ASSOCIATION which are in meeting May 29 to June 7. The Committee hopes to secure the Milwaukee stop-off concession applied for. The Committee will report in each subsequent publication of THE JOURNAL.

H. L. E. JOHNSON, Chairman, Washington, D.C.;
MILES F. PORTER, Fort Wayne, Ind.;
I. N. LOVE, New York City,

Deaths and Obituaries.

Samuel G. Dorr, M.D., of Buffalo, N. Y., 1875, died at his home in that city, from angina pectoris, April 28, aged 60. He served as a recruiting agent in Livingston County during the Civil War, was prominent in politics for twenty years, and appointed postmaster of Buffalo in 1899. At one time he was an active practitioner in the eastern section.

William Wallace Welch, M.D., Rush Medical College, Chicago, 1846, died from paralysis, April 29, at the Soldiers' Home, Quincy, aged 79. During the Civil War he was surgeon of the 53d Illinois Volunteers, and later Chief of Staff of the Surgeons of the Army of the West. After the war he settled in La Salle and practiced there and in Galesburg.

Horacio Guzman, M.D., University of Pennsylvania, Philadelphia, formerly minister from Nicaragua to the United States, later secretary and acting director of the Bureau of American Republics, an expert Spanish-English and English-Spanish translator, died suddenly in Washington, D.C., April 23, aged about 50 years.

James A. Summerville, M.D., Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1866, a founder of the Menominee River Hospital, Marinette, Wis., died from cerebral meningitis, at the hospital, April 25, aged 60.

Howard M. Bloch, M.D., College of Physicians and Surgeons of San Francisco, 1898, who, after graduation spent eighteen months in special work at Johns Hopkins University, Baltimore, and then went to Berlin for further study and research, died recently in Berlin, after a short illness.

Percy M. Graham, M.D., Jefferson Medical College, Philadelphia, died at his residence in Philadelphia, April 23, aged 40, as a result of an injury to the head received while a student. He had been blind for fifteen years, and with the loss of sight came ill-health, which persisted until his death.

Irving C. Rosse, M.D., University of Maryland, Baltimore, 1866, of Washington, D.C., died there May 3, aged 54. He was an authority in mental diseases, a writer of repute, and surgeon of the U. S. Steamer *Corwin*, on two Polar expeditions.

Robert W. Greenleaf, M.D., Harvard University Medical School, 1885, of Boston, and a member of the AMERICAN MEDICAL ASSOCIATION, died suddenly at Ipswich, Mass., April 28, aged 46.

Albert Hare, M.D., College of Physicians and Surgeons, Baltimore, 1883, of McKeesport, Pa., died April 26, at Tarentum, Pa., after an illness of a year, aged 45.

George Matthias Swain, M.D,. College of Physicians and Surgeons, N. Y., 1870, of Chatham, N. J., died April 26.

E. L. Gilliam, M.D., died recently at Letart, W. Va., aged 60 years.

Societies.

COMING MEETINGS.

American Medical Association, St. Paul, Minn., June 4-7.
Arkansas Medical Society, Hot Springs, May 14-16, 1901.
Medical Association of Montana, Great Falls, May 15-16, 1901.
Michigan State Medical Society, Battle Creek, May 15-16, 1901.
Iowa State Medical Society, Davenport, May 15, 1901.
Indiana State Medical Society, South Bend, May 15-17, 1901.
New Hampshire Medical Society, Concord, May 16-17, 1901.
Medical Association of Missouri, Jefferson City, May 21-23, 1901.
Illinois State Medical Society, Peoria, May 21-23, 1901.
Medical Society of North Carolina, Durham, May 21-23, 1901.
Connecticut Medical Society, Hartford, May 22-23, 1901.
North Dakota Medical Society, Fargo, May 22-23, 1901.
Kentucky State Medical Society, Louisville, May 22-24, 1901.
Medical Society of West Virginia, Grafton, May 22-24, 1901.
American Laryngological, Rhinological and Otological Society, New York City, May 23-25, 1901.
American Laryngological Association, New Haven, Conn., May 27-29, 1901.
American Pediatric Society, Niagara Falls, N. Y., May 28, 1901.
American Gynecological Association, Chicago, May 28, 1901.

American Climatological Association, Niagara Falls, N. Y., May 30, 1901.
American Association of Military Surgeons of the United States, St. Paul, May 30, 31, June 1, 1901.
American Academy of Medicine, St. Paul, Minn., June 1-3.
National Con. State Medical Examiners and Licensing Boards, St. Paul, Minn., June 3.
Association of American Medical Colleges, St. Paul, June 3.
American Medical Editors' Association, St. Paul, June 3.
Minnesota State Medical Society, St. Paul, June 3.
American Proctological Association, St. Paul, Minn., June 4-5.
American Dermatological Association, Chicago, June 4-6.
Rhode Island Medical Society, Providence, June 6.
International Association of Railway Surgeons, Milwaukee, June 10-12.
Medical Society of Delaware, Lewes, June 11.
Oregon State Medical Society, Portland, June 11-12.
American Medico-Psychological Association, Milwaukee, Wis., June 11-14.
Maine Medical Association, Portland, June 12-14.
Massachusetts Medical Society, Boston, June 12.
Colorado State Medical Society, Denver, June 18.
American Orthopedic Association, Niagara Falls, June 18-20.
Medical Society of New Jersey, Allenhurst, June 25-27.
Wisconsin State Medical Society, Waukesha, June 26.

Geneva County (Ala.) Medical Society.—This Society met on April 3, at Geneva, and elected Dr. Alpheus B. Jernigan, Geneva, president.

Iowa State Medical Association.—The semi-centennial meeting of this Association will be held in Davenport, May 15-17. Dr. Robert E. Conniff, Sioux City, in the chair.

Medical Society of New Jersey.—The State Medical Society will hold its annual meeting at Allenhurst, June 25-27, under the presidency of Dr. John D. McGill, Jersey City.

New Hampshire Medical Society.—The one hundred and tenth annual meeting of this Society will be held in Concord, May 16 and 17, President William Thayer Smith, Hanover, in the chair.

Detroit Physicians' Association.—Under the new constitution, this Association met April 29 for its annual session, and re-elected Dr. Guy L. Kiefer, president; Dr. Henry L. Obetz, vice-president, and Dr. Walter J. Cree, secretary.

Michigan State Medical Society.—The thirty-sixth annual meeting of this Society will be held in Battle Creek, May 15 and 16, under the presidency of Dr. Philo D. Patterson, Charlotte. Headquarters will be at the Post Tavern.

Golden Belt (Kan.) Medical Society.—In addition to the announcement of election of officers in the last issue of THE JOURNAL, Dr. Edgar L. Simonton, Wamego, and Enos R. Cheney, Gypsum, were elected vice-presidents of the Society.

Detroit Medical Society.—On April 24 the election of officers of this Society took place, with the following result: Dr. Delos L. Parker, president; Dr. F. Lydston Newman, vice-president; Dr. Wadsworth Warren, treasurer, and Dr. Louis J. Goux, secretary.

Howard County (Md.) Medical Association.—At a meeting of this Society held at Ellicott City, April 23, Dr. John M. B. Rogers, Ellicott City, was elected president; Dr. W. W. L. Cissell, Highland, vice-president, and Dr. William B. Gambrill, Alberton, secretary-treasurer.

Belmont County (Ohio) Medical Association.—The bimonthly meeting of this Society was held at Bellaire, April 24. Dr. John A. Heinlein, Bridgeport, the newly-elected president, was installed, and delegates to the AMERICAN MEDICAL ASSOCIATION were elected.

Waller County (Texas) Medical Association.—The physicians of Hempstead, Texas, met April 23 and organized this Association, with the following officers: Dr. James H. Morrison, president; Dr. Thomas T. Erwin, vice-president; Dr. L. Lee Mahan, secretary, and Dr. Cecil W. Le Grand, treasurer.

Somerset County (N. J.) Medical Society.—The annual meeting of the Society was held at Somerville, April 25. Dr. William H. Merrell, South Branch, was elected president; Dr. Sewell O. B. Taylor, Millstone, vice-president; Dr. Aaron L. Stillwell, Somerville, secretary, and Dr. John P. Hecht, Somerville, treasurer.

Indiana State Medical Society.—The fifty-second annual session of this Society will be held in South Bend, May 15-17, under the presidency of Dr. George W. McCaskey, Fort Wayne. Dr. John A. Wyeth, New York, will deliver an address on "The Making of a Doctor," and the subject of the president's address will be "Physiology the Basis of Clinical Medicine: A Plea for Scientific Methods."

Illinois State Medical Society.—The fiftieth anniversary of this Society will be held in Peoria, May 21 to 23, under the presidency of Dr. George N. Kreider. The local committee and the Peoria City Medical Society are making extensive preparations for the entertainment of visitors.

Macoupin County (Ill.) Medical Association.—The semi-annual convention of this Society was held at Shipman, last week. Dr. John R. Ash, Brighton, was elected president; Dr. William L. Penniman, Shipman, vice-president, and Dr. J. Palmer Matthews, Carlinville, secretary. The next meeting will be held in Greenfield, in October.

Berkshire District (Mass.) Medical Society.—The annual meeting of this Society was held at Pittsfield, April 25, at which Dr. Morgan L. Woodruff was elected president; Dr. Stephen C. Burton, vice-president; Dr. Lawrence C. Swift, secretary; Dr. William L. R. Paddock, treasurer, and Dr. William W. Leavitt, librarian, all of Pittsfield.

Clark County (Ind.) Medical Society.—At the meeting of this Society at Jeffersonville, April 23, the following officers were elected: Dr. Harry C. Sharpe, Jeffersonville, president; Dr. Cadwallader Jones, Charlestown, vice-president, and Dr. J. Trueman Davis, Jeffersonville, secretary and treasurer. Delegates to the AMERICAN MEDICAL ASSOCIATION were also chosen.

Brainard District (Ill.) Medical Society.—The twenty-fourth annual meeting of this Society was held at Lincoln, April 25. Dr. John R. Barnett, Lincoln, was elected president; Dr. W. P. Walker, Mason City, vice-president; Dr. Katherine Miller, Lincoln, secretary, and Dr. Charles C. Reed, Lincoln, treasurer. The Society will hold its next meeting at Springfield in July.

Southwest Missouri Medical Association.—The semi-annual meeting of this organization was held in Springfield April 25. Dr. Hilliard J. Rowe, Willow Springs, was elected president; Dr. Richard W. Paris, Lawrenceburg, vice president; Dr. William P. Patterson, Springfield, corresponding secretary, and Dr. Henry Shuttee, West Plains, treasurer. The next meeting will be held in Joplin, in October.

American Medico-Psychological Association.—The fifty-seventh annual meeting of this Association will be held at Milwaukee, June 11-14, under the executive charge of Dr. Peter M. Wise, New York. The sessions will be held at the Hotel Pfister. The annual address is to be delivered by Dr. Warren P. Lombard, of the University of Michigan, on the subject "Reenforcement and Inhibition of Nervous Processes."

Toronto Clinical Society.—This Society held the final meeting of the season on May 1. The following officers were elected: President, Dr. James F. W. Ross; vice-president, Dr. Edmund E. King; treasurer, Dr. William H. Pepler; recording secretary, Dr. George Elliott; corresponding secretary, Dr. Arthur A. Small; executive committee, Drs. Herbert J. Hamilton, Henry B. Anderson, William B. Thistle, Herbert A. Bruce and George A. Bingham.

Association of Military Surgeons of the United States.—The tenth annual meeting of this Association will be held in St. Paul, Minn., May 30 and 31 and June 1, headquarters being at the Ryan Hotel. Dr. Alexander J. Stone, surgeon-general of Minnesota, will preside. The meetings will be held in the House of Representatives and Senate Chamber. The Central and Western Passenger Associations have made a rate of one fare plus $2 for the round trip.

Alumni Association of the Medical Department of the University of Buffalo.—The twenty-sixth annual meeting of this body was held April 27, and the following officers were elected: Dr. Frank H. Moyer, Moscow, president; Drs. Alfred W. Bayliss, Buffalo; Alfred W. Henckell, Rochester; Fridolin Thoma, Buffalo; Henry S. Benham, Honeoye Falls and Jane W. Carroll, Buffalo, vice-presidents; Dr. Thomas H. McKee, Buffalo, secretary, and Dr. Herman K. DeGroat, Buffalo, treasurer.

Medical and Chirurgical Faculty of Maryland.—The one hundred and third annual meeting of this body was held at Baltimore, April 23-25, Dr. Samuel Theobald, Baltimore, presiding. The following officers were elected: Dr. J. McPherson Scott, of Hagerstown, president; Drs. Harry Friedenwald, Baltimore, and Dr. Brice W. Goldsborough, Cambridge, vice-presidents; Dr. J. Williams Lord, Baltimore, secretary; Dr. Thomas A. Ashby, Baltimore, treasurer, and Drs. William Osler, John D. Blake, L. McLane Tiffany and H. B. Jacobs, executive committee.

National Association for the Study of Epilepsy and the Care and Treatment of Epileptics.—The first annual meet-

ing of this Society, which has for its objects the promotion of the general welfare of all sufferers from epilepsy; the stimulation of the study of the causes and of the methods of cure of this disease; the advocacy of the care of epileptics in institutions where they may receive a common-school education, acquire trades and be treated by the best medical skill for their malady, and rendering assistance to the various states in America in making proper provision for epileptics, will be held in Washington, D.C., May 14 and 15, under the presidency of William Pryor Letchworth, LL.D.

Charity Hospital of the Louisiana Alumni Association.—The annual meeting of this body was held in New Orleans April 22-24. Clinics were held by Drs. Charles Chassaignac and Frederick W. Parham on the first day; by Drs. Ernest S. Lewis and P. Emile Archinard the second day, and by Drs. John E. Elliott and Rudolph Matas the third day. Dr. Louis G. LeBeuf, New Orleans, was elected president; Dr. Jackson J. Ayo, Lafourche, vice-president; Dr. William H. Seeman, New Orleans, secretary, and Dr. S. W. Stafford, New Orleans, treasurer.

Erie County Society for the Prevention of Tuberculosis.—A meeting of this recently organized Society was held April 25. The following were chosen as directors for one year: Mayor Conrad Diehl, Dr. Ernest Wende, Dr. Lee H. Smith, president of the Society of Natural Sciences, Dr. Mary I. Denton, president of the Investigating Club. Directors for two years: Dr. John H. Pryor, trustee of the New York State Consumptive Hospital, Dr. J. C. Thompson, Rev. Thomas A. Donohue, Dr. Albert H. Briggs and Dr. William G. Bissell. Directors for three years: Dr. Benjamin G. Long, Rev. O. P. Gifford, D.D., Dr. James S. Smith, Dr. Henry Hopkins and Dr. Charles E. Congdon. Officers of the ensuing year were chosen as follows: Dr. Benjamin G. Long, president; Dr. Henry R. Hopkins, vice-president; Dr. William G. Bissell, secretary, and Dr. Albert H. Briggs, treasurer.

Louisiana State Medical Society.—The twenty-second annual meeting of this Society was held in New Orleans, April 18 to 20. Dr. Frederick W. Parham, New Orleans, presided. Nearly 100 delegates registered the first day, and 51 applicants were elected to membership. The president, in his address, deplored the transfer of the quarantine station at Dry Tortugas from the U. S. Treasury to the Navy Department, which would mean its transformation from a quarantine and dispensary station to a coaling station. He suggested that the Society enter a vigorous protest against this action. Dr. Luther Sexton, New Orleans, discussed the topic: "Is the Tendency Toward Prescribing Proprietary and Patent Medicines Increasing; and What will be its Final Effect Upon the Professions of Medicine and Pharmacy?" He arraigned physicians for prescribing remedies of unknown formulæ, and druggists for recommending and selling patent medicines. His paper provoked a spirited but one-sided discussion. The Society will hold its next meeting in Shreveport. Dr. T. Edgar Schumpert was elected president and Dr. Isaac M. Callaway, vice-president, both of Shreveport.

Texas State Medical Association.—The thirty-third annual meeting of this ASSOCIATION was held in Galveston, April 23 to 26, Dr. Berthold E. Hadra, Dallas, presiding. The committee appointed to present eighteen names to the governor for members of the State Examining Board reported as follows: Dr. Joseph W. Scott, Houston; John H. Evans, Palestine; Thomas J. Bell, Tyler. Don Juan Jenkins, Dwingerfield; J. T. Wilson, Sherman; J. C. Loggins, Ennis; Taylor Hudson, Belton; Richard H. Rush, De Leon; Matthew M. Smith, Austin; John C. Jones, Gonzales; Joseph H. Reuss, Cuero; Frank Paschal, San Antonio; P. C. Coleman, Colorado; Walter Shropshire, Yoakum; Sam R. Burroughs, Buffalo; William R. Blailock, McGregor; Arthur C. Scott, Temple; and Asa B. Gardner, Bellville. Of these the governor will select nine for appointment. The Association decided to adopt as a basis of affiliation of county and district societies, the adoption of the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION; the payment of ten cents a member into the treasury of the state association, and that one delegate to the state association be allowed for societies of fifty or less members; and one additional delegate for each additional fifty members or fraction over thirty. The following officers were elected: Dr. Taylor Hudson, Belton, president; Drs. Samuel C. Red, Houston, James W. Nixon, Gonzales, and William A. Watkins, Kemp, vice presidents. Delegates to the AMERICAN MEDICAL ASSOCIATION were also appointed. The next session will be in El Paso, April 4, 1902. The Association recommended that the AMERICAN MEDICAL ASSOCIATION hold its 1902 session at Houston.

ASSOCIATION OF AMERICAN PHYSICIANS.

Sixteenth Annual Meeting, held in Washington, D. C., April 30 and May 1 and 2.

Address of President.

DR. WM. H. WELCH, Baltimore, Md., delivered this address, at the opening session, comparing the present conditions in medicine with those at the time of the organization of the Association.

Peculiar Cardiac Sound.

DR. HOBART AMORY HARE, Philadelphia, in a paper on this subject, described a peculiar sound noted during systole, one inch to the right of the sternum and the same distance to the left of the nipple, on a level with the latter. The sound is somewhat similar to presystolic friction sound and increased by excitement and fear. He considers it evidence of abnormal myocardial action, and finds it often in depression after la grippe. He considers it of value in the diagnosis in the beginning of pulmonary tuberculosis.

Cardiac Hydrothorax.

DR. ALFRED STENGEL, Philadelphia, in his paper on this subject, considered the causes and clinical features of this condition, especially treating hydrothorax of the right side. He reported his observations on 100 patients suffering with disease of the heart, 17 of whom presented hydrothorax. Of these latter, 5 presented it on the right side and 3 on the left, and at some time during the affection it was bilateral in 9. In 2 it began on the right and was afterward bilateral. He thinks it may be traced to the obliterated lymph channels or venous pressure.

Aortic Insufficiency.

DR. W. S. THAYER, Baltimore, Md., discussed the Flint murmur in aortic insufficiency, referring to Flint's first description of this murmur in 1862, as presystolic and confined to the apex. From his observations on patients presenting the murmur in the Johns Hopkins Hospital, he has found that since May 1889, 74 cases with aortic insufficiency were noted postmortem, and the history shows that at some period in their illness, in 45, the rumbling murmur was confined to the area of the apex. Mitral stenosis was noted in connection with aortic insufficiency in 12 of the 45; 33 of 58 cases of aortic insufficiency presented the Flint murmur, and no abnormality could be detected in the mitral valve in 17 of the 33. His observations on the physical signs in 22 patients presenting mitral stenosis without complications show that the aortic thrill was present in 54.5 per cent., a sharp "snappy" first sound in 68 per cent., and in 81 per cent. of presystolic murmur. Acute rheumatism or chorea existed in 13 of the 33 patients who gave the Flint murmur, and in more than 50 per cent. arteriosclerosis was clinically shown.

Cardiac Degeneration.

DR. BEVERLEY ROBINSON, New York City, considered chronic myocarditis and fatty degeneration of the heart, believing that the differentiation of these two conditions is usually difficult. He enumerated the symptoms of cardiac weakness. He considers intestinal antiseptics of value. Where there are attacks of dizziness, the etiology is not understood, and the pulse is weak, missing occasional beats, the commencement of fatty degeneration is perhaps indicated and iron and arsenic are of use, also strophanthus and strychnia. He treated the etiology in detail, for example obesity, gout, syphilis, senility, mental strain, etc., all of which he considers as factors. The changes may be fibrous instead of fatty in the senile, and there may be hypertrophic dilatation, while we are quite likely to have thickened and tortuous arteries, with urine of low specific gravity, diminished in amount, but not containing sugar or albumin.

Pernicious Anemia.

DR. F. P. HENRY, Philadelphia, at the last year's meeting of the Association, presented his observations on a number of cases of this affection and this year reported thereon. He thinks it is unnecessary to consider megaloblasts pathognomonic. In addition to the blood findings in the diagnosis, we should rely on general signs and symptoms. He says, too, that

as the nucleated cells are found in other conditions, they do not mean the presence of pernicious anemia only.

DR. FRANK BILLINGS, Chicago, presented charts showing the progress made by a number of patients suffering with pernicious anemia, reported by him last year; 10 of the 20 patients died during the year and 4 are still under observation. He pointed out that a large number of nucleated red cells appear with marked decline in the patient's condition, though there have been a few exceptions to this. He also cited a case where the patient developed the typical lesions of the spinal cord previously observed by others in pernicious anemia.

Splenic Miliary Tuberculosis.

DR. D. B. STEWART, Philadelphia, reported a case of acute splenic miliary tuberculosis in a nurse, who, fatigued from caring for a typhoid patient, acquired la grippe and then nursed a tubercular patient before completely recovered from la grippe. The condition originated in the spleen and the patient lived sixty-eight days, dying of generalized miliary tuberculosis, the spleen being markedly involved.

Cyst of the Omentum.

DR. A. JACOBI, New York City, presented a cyst of the omentum removed from a child of 2 years. The condition was at first believed to be tuberculosis of the peritoneum, and success followed repeated tappings of the abdomen for a year, the tumor recurring, and then disappearing after each tapping.

Lead Poisoning.

DR. ALFRED STENGEL, Philadelphia, considered the degenerative type of red blood-corpuscles found in lead poisoning. He views it as a granular degeneration, which can be detected by its reaction in the presence of certain basic aniline dyes, for instance, thionin. The granules are round or club-shaped and may be seen in normal red corpuscles or in those of irregular shape. They may be distributed in clumps and be as large as eosinophile granules. He does not find them in freshly drawn blood and does not consider them mitotic remains of nuclei. They are always present where lead poisoning is well evidenced, and are larger the more severe the case.

Neurasthenia and Melancholia.

DR. M. ALLEN STARR, New York City, discussed the toxic origin of these affections, classifying them as four types: 1. Where anxiety and worry are the cause. 2. Those where overexertion is the principal factor. 3. Those with neuronic evidences of beginning degeneration. 4. Those in which the etiology is toxic. In the latter type there is headache, irritability, lack of concentration, regurgitation, eructation, constipation, etc. The patient feels better from noon until 9 p. m., and then awakens at 4 a. m. with depression, which remains with him through the morning, this cycle repeating itself over and over. He associates this with gastro-intestinal absorption and hence ascribes a toxic etiology. He follows out a digestive and eliminative treatment with calomel freely repeated in 1/10 grain doses, combined with podophyllin in 1/4 grain doses, Carlsbad salts and salicylate of sodium at breakfast. He also sees to intestinal antisepsis, baths, massage and rest.

(To be Continued.)

CHICAGO MEDICAL AND CHICAGO NEUROLOGICAL SOCIETIES.

Joint Meeting held April 5.

The president of the Neurological Society, Dr. Hugh T. Patrick, in the chair.

The subject for discussion was "Epilepsy."

Epilepsy: Its Definition, Pathology and Symptomatology.

DR. ELBERT WING read a paper on this subject, saying: The definitions found in the literature of this subject are of two classes. Those in one do not define anything, but are mere generalized statements applicable to several diseases and of no value. The others are carefully worded, exact definitions. Examples of the first class are: "Epilepsy is a sudden, rapid, excessive, occasional and local discharge of the cerebral cortex." "It is a syndrome of nervous and mental symptoms appearing under a variety of pathological states." The best representative of the other class is that of Gowers: "The term epilepsy is applied to a disease in which there are convulsions of a certain type, or sudden loss or impairment of consciousness, but in which the convulsions are not due to active brain disease, to reflex irritation, or to abnormal blood states, and in which isolated loss of consciousness is not due to primary failure of the heart's action." In their discussion of the subject, all writers practically accept the conditions of Gowers' definition, and it may be affirmed: 1. That impairment or loss of consciousness is the fundamental phenomenon in a paroxysm of epilepsy. 2. That convulsions of a purposeless type may or may not accompany the disturbance of consciousness. 3. These phenomena must not be due to active brain disease, blood states, reflex irritation or primary failure of heart's action; that is to say, it is possible to distinguish attacks of idiopathic epilepsy from attacks which closely simulate epilepsy, but which occur in connection with other diseases.

Diagnosis and Variations of Epilepsy.

DR. HAROLD N. MOYER spoke of the "Diagnosis and Variations of Epilepsy as Ordinarily Recognized." Epilepsy is easily identified when the convulsive attacks are typical. Unfortunately, the family physician often, and the consultant almost invariably, relies on the descriptions of lay people for the sequence of events in the seizure. Epilepsy is a symptom-complex, but unlike chorea and other symptomatic disorders of the nervous system, any of the features which make up the attack, may be absent in a particular case. The definition of epilepsy by Donath seems to be as satisfactory as any so far proposed: "An abnormal excitement of the cerebral cortex which increases suddenly, is periodical in its manifestations, has a typical course and disappears rapidly. Whether the attack occurs without unconsciousness and amnesia, depends upon the strength and extent of the irritation." He thinks the ordinary classifications of grand mal and petit mal are provisional only as they relate to the severity of the convulsions, the one type shading into the other, but such a definition is useful. A lapse of consciousness is the most constant feature in an epileptic seizure, but it may be absent even in cases which are characterized by convulsions, though the latter is very rare. In petit mal the loss of consciousness is very slight, or may not occur at all. Jacksonian epilepsy is commonly understood to mean those attacks which begin in a limited area of the cortex and extend by continuity. Sometimes the convulsions become general with a loss of consciousness, but more frequently they are only partial.

In conclusion, emphasis was laid on the importance of the early recognition of epilepsy. In too many instances the family physician shrinks from the diagnosis and not infrequently the family is advised that a single convulsion, even though it have all the epileptic characters, is due to a disturbance of the stomach, or constipation or other trivial cause, or, if it occur in a child, that the condition will be outgrown. This leads to a false sense of security and a failure of early treatment in this disease, when it is curable.

Hereditary, Mental and Allied States, Including Psychical Epilepsy.

DR. SANGER BROWN read a paper on this topic. He thinks suddenness and violence of phenomena in epilepsy are suggestive of chemical reaction. Therapeutic measures founded on the theory that the disease is due to an excess of diminution of this or that organic substance in the economy have been disappointing. Heredity may be divided into similar and dissimilar; similar implies the existence of epilepsy in ascendents, while dissimilar heredity refers to such ancestral diseases as insanity and imbecility. Authors do not agree as to what diseases should be included in the list of dissimilar hereditary influences. Some include tuberculosis, migraine and hysteria. All agree that insanity and imbecility are by far the most important factors. Accepting the latter limitation, Gowers finds either similar or dissimilar heredity in 35 per cent. of all cases, and of these two-thirds are similar, and one-third dissimilar, with a slight preponderance of females. Similar heredity is more often transmitted through the mother, and the heritage prefers the sex of the parent from which it was derived. That

the disease is due largely to an inherited defect of the nerve elements, rendering them unduly stable, and conformably the fact that a majority of all hereditary cases begin during the same period, would be expected when the instability of the nervous system during childhood, youth and adolescence is remembered. The author's experience neither confirms nor contradicts the statement that cases of hereditary epilepsy are more amenable to treatment than those devoid of that feature.

The psychic or mental manifestations were divided into those momentarily preceding or terminating in other phenomena, or those extending over a period ranging from a few minutes to a few days prior to the seizure or seizures, those which alone comprise the individual attack, and those which are the result of the fits either momentarily or remotely, and finally, a class of cases in which the mental disorder is of such a nature that it might be more properly regarded as an association with rather an expression of epilepsy. Of the first class, the most common are those which momentarily precede the fit, and fairly constitute the mental or psychic aura. To mention these in the order of their frequency, those cases come first in which a familiar environment seems strange, and next those in which the surroundings seem a repetition or at least peculiarly familiar.

Treatment of Epilepsy.

DR. DANIEL R. BROWER, discussing this phase of the subject, said the prophylaxis of epilepsy demands much more attention than it ordinarily received. A convulsion in the infancy of a child of neurotic inheritance is often the first manifestation of an epileptic tendency, and deserves serious attention. Children of this tendency should be relieved from severe nervous and mental strains. They should be kept from the use of alcoholics, opiates, coffee, tea and tobacco in early age and adolescence, and from sexual irregularities and excesses. Phimosis, errors in vision, diseases or deformities of the upper air-passages, or any other abnormality may demand attention and correction. The question of occupation is an important one, and parents must sacrifice their ambitions for such children in order to secure their bodily and mental welfare. The prophylaxis of post-traumatic epilepsy requires the prompt and judicious treatment of every head injury. The speaker discussed the prevention of individual seizures, treatment during an attack, and the care and treatment between the seizures. Hydrotherapy is an important aid to treatment. A vigorously active skin means a more perfect elimination of toxins. A tepid bath with an abundance of soap is ordered twice a week; temperature 125 F., and a cold douche of an average temperature of 75 degrees daily, to be followed by vigorous friction. Cerebral galvanization is of value. Large electrodes should be used, and a current strength of from one to three milliamperes, and daily if possible. Two steps in this cerebral galvanization are: 1, the current is passed longitudinally, the positive over the forehead, and the negative over the nucha; and 2, from temple to temple; the séance should last about ten minutes. Some form of gymnastics should be ordered for the great majority of cases. The bromids still hold the first rank in the treatment. They must be used with proper precautions, and bromism avoided. They must be used for a long time. No patient can be called cured until the seizures have been stopped for at least five years. Their curative action requires the production of their full physiologic action, but not their toxic. He rarely exceeds one dram (4.00) a day, and is of the opinion that one dram and a half (6.00) should not be exceeded in any case. A serious objection on the part of some patients to the use of the bromids is the acne which they produce, a result that depends less on the dose than on the idiosyncrasy of the patient. Taking the mixture with a very large amount of alkalinized water diminishes the amount of it, as does also the addition of liquor sodii arsenatis in from three to five minims (0.20 to 0.30) to each dose. The arsenic, by its alterative and tonic qualities, aids the cure. In ordinary cases the iodid of sodium should be given in five grains (0.30) three times a day in the bromid mixture. In the syphilitic cases it should be given in the largest dose that is possible. When the moderate doses of the bromids fail to stop the seizures, he advises a dose of grs. x to grs. xx of chloral at bedtime, often with benefit. Acetanilid is synergistic to the bromids, and when administered in grs ii to v, three times a day, will sometimes be of service. The opium-bromid treatment has not been satisfactory in his hands. Glonoin and the nitrite of sodium are valuable remedies against the petit mal attacks, when given in conjunction with the bromids. The best intestinal antiseptics are salol, salicylate of bismuth and guaiacol carbonate. As to tonics, strychnin, arsenic, hypophosphites, phosphoric acid and iron are at all times of service. He gives iron, preferably the bromid, in half grain doses three times a day, whenever the hemoglobinometer indicates it, and then it is of great value. The results that have followed cervical sympathectomy, oöphorectomy, ligating the vertebral arteries, and the carotid arteries, have not been such as to justify advising them. If epilepsy is essentially a disease of the cell bodies, of cortical neurons, and a proliferation of the neuroglia, then all such operations are unscientific.

The colony system is the highest ideal for the treatment of these unfortunates. The proof of this is overwhelming in results obtained both at home and abroad.

DR. MAXIMILIAN HERZOG spoke on the general pathology and special histopathology of epilepsy, rehearsing the various theories and hypotheses that have been advanced relative to this affection.

DR. SYDNEY KUH said he tried the withdrawal of salt, which in Dr. Brower's hand gave such good results, and his results were absolutely negative. The same is true of adonis vernalis. He has tried them both in a number of cases in this way: He has given the bromids when the bromid treatment alone was unsuccessful and added the adonis vernalis to it, and there was not a single case in which the addition of adonis vernalis yielded better results than the bromids alone would have done. He agrees with Dr. Brower as to the combination opium-bromid treatment. In some cases this combination yields favorable results for a short time, but whether they are not due to the psychic factor more than anything else is doubtful. For some years he has in every case in which the use of bromid was indicated, employed the bromid of strontium, and after an experience comprising hundreds of cases in which this drug was given, he feels that it has certain advantages over the bromid of sodium, bromid of potassium, bromid of ammonium, or a combination of these three. The bromid of strontium has not the same tendency to produce irritation of the gastro-intestinal tract that all the other salts have, more or less. In cases of neurasthenia, with nervous dyspepsia and loss of appetite, he has frequently seen a pronounced increase of appetite after the administration of small doses of bromid of strontium. It is much less liable to produce acne than other forms of the bromid.

The continued use of large doses of the bromids have a tendency to produce mental impairment. Frequent epileptic seizures almost invariably lead to terminal dementia sooner or later. The surgical treatment of epilepsy has been unsatisfactory, and a good many cases are being operated on that should not be.

DR. JACOB FRANK spoke briefly on the surgical aspects of epilepsy. Eleven years ago he presented a series of cases of Jacksonian epilepsy before the Society, after operations, and at that time remarked that operations for epilepsy would never become popular, for the reason that if patients recovered from the surgical operations, they would still be unfit to discharge their duties as business men or as men earning livelihoods. If a surgeon undertakes an operation for the relief of epilepsy, his duty should not end by merely opening the skull and the dura, but the brain should be explored. He cited a case in which he believes that if the surgeon had explored the brain at the time he operated the patient would have recovered.

DR. HENRY GRADLE dwelt on reflex epilepsy of peripheral origin, and mentioned two or three interesting cases.

DR. FREDERICK LEUSMAN narrated the case of a young man, a confirmed masturbator, in whom epilepsy developed, complicated by hemorrhoids. The hemorrhoids were removed, and the vena dorsalis penis exsected for about an inch on each side, with the result of cessation of the epileptic seizures.

DR. L. HARRISON METTLER emphasized the importance of making, if possible, an early diagnosis. Recently he saw a

statement, from one of the highest and latest authorities, that a diagnosis of epilepsy could not be made on the first or a single attack. There is no doubt that in some cases it is impossible to make an early diagnosis of epilepsy, for the reason that it so closely simulates in some respects hysteria, uremic convulsions and other manifestations. In making an early diagnosis of epilepsy physicians should be extremely careful about expressing their opinions to the relatives of patients until a more positive history can be had, preceding the first attack.

DR. JULIUS GRINKER alluded to the prevention of marriages among epileptics. Although it is not known that epilepsy is transmitted directly from father to offspring, yet investigations have shown that hysteria, insanity, and other mental defects are found in idiopathic epileptics. It is not possible that an epileptic may produce another epileptic? Epileptics who have married have become much worse as a result of their marital relations. A woman, whom he treated some years ago with the bromids, for epilepsy, and who was able to stave off the attacks for months, got married, shortly after which the attacks returned three times a week. She finally consulted him as to whether or not marriage was to blame for the recurrence of the seizures, and he replied in the affirmative. In two cases he had substituted borax for the bromids with beneficial results. Inasmuch as most epileptics are benefited by bromids, the cases in which he had an opportunity to try the opium and borax treatment were naturally few, and this explains in a measure why Dr. Brower only tried this treatment in a few cases with unsatisfactory results. He would suggest that it be not entirely condemned in a disease like epilepsy, in which so little can be accomplished with any kind of treatment.

WILLS' HOSPITAL OPHTHALMIC SOCIETY.

Meeting held in Philadelphia.

Dr. P. N. K. Sonwenk in the chair.

Primary Sarcoma of the Iris.

DR. CONRAD BERENS presented a case illustrating the secondary stage of primary sarcoma of the iris. The patient, a young man, who was free from any symptoms and obtainable history of syphilis or tuberculosis, first noticed the affection some three years previously. Imbedded in a partially degenerate and comparatively uninflamed iris-tissue were five irregular tumor masses, over and through which some fine vessel ramifications could be plainly seen. The plane of the iris was pushed forward. The pupillary area, which was slightly distorted, contained some meshes of glistening lymph. The crystalline lens occupied its normal position. No view of the fundus could be obtained. Intra-ocular tension was increased to plus two. There was no ciliary tenderness. Based upon these findings and the fact that the therapeutic tests for syphilis and tuberculosis had been unsuccessfully applied, Dr. Berens felt certain of the diagnosis, and believed that it would be proven after enucleation.

DR. FRANK FISHER tended to the opinion that there might be an iridocyclitic element in the case.

DR. WILLIAM W. MCCLURE agreed in the diagnosis, giving a number of differential points between the one almost certain and the other possible processes.

DR. CHARLES A. OLIVER, while fully agreeing in the etiology of the condition was disposed to place the main bulk of the growth in the ciliary body.

Embolism of the Central Retinal Artery.

DR. FRANK FISHER exhibited a series of water-color sketches of several stages of a case of embolism of the central retinal artery. The patient, a young subject with a mitral murmur, gave the usual history of sudden blindness. Besides the characteristic eyeground of the affection, all of the main retinal blood-currents, both arterial and venous, were found to be interruptedly flowing in their proper directions; the curious fact being that the venous currents were traveling with twice the rapidity of the arterial.

DR. W. W. MCCLURE stated that he had had the opportunity to see two cases in their very earliest stages. One of the early changes he had found consists in a lead-tinted area bounded upon its superior and inferior borders by two fine vascular twigs that are not ordinarily observable, giving the area of infiltration a caudate form. The second of his cases, which but partially closed the arteries, showed broken blood currents in the two principal veins running in the direction of that which is pursued by the ordinarily contained blood.

DR. SCHWENK had seen six clinical cases of central retinal artery embolism, one of which occurred in Dr. Harlan's service at the hospital, and showed the vascular beadings. His experience had been that vision seldom if ever returns in the pronounced type of the disorder.

DR. CHARLES A. OLIVER was greatly interested in the double rapidity of the venous current seen in Dr. Fisher's case, and spoke of the difference between trophic and functional disturbances found in these cases, drawing attention to the two forms of vascular circulation in the human retina. He made mention of the possibilities of endarteritis, vessel spasm and thrombus in such cases, and did not deem a differential clinical diagnosis as entirely certain in every instance as the several conditions might be coexistent.

DR. WALTER L. PYLE called attention to several cases in ophthalmic literature, in which, although there was complete embolism of the central artery, a small sector in the field of vision was preserved; ophthalmoscopic examination showing a cilioretinal artery supplying the corresponding retinal area.

DR. FISHER did not believe that there was any collateral retinal circulation. He considered the most remarkable feature in his case to be the visibility of both the arterial and the venous circulation in the retina at the same time. He deemed prognosis as to vision doubtful when an embolism is situated within the retina, as it is not likely to undergo absorption in such a position.

Successful Extraction of Manganese Steel from the Crystalline Lens.

DR. P. N. K. SCHWENK showed a 45-year-old man in whom he had successfully removed a piece of manganese steel from the left lens. The points of interest in his case consisted in the facts that the form of steel imbedded in the lens substance was but feebly attracted by the magnet, and that much of the lens matter, which had appeared transparent at the time of the removal of the foreign body, afterward became opaque and greatly swollen.

DR. MCCLURE gave the details of a case of steel in the lens in which, before making the corneal section with a von Graefe knife, he created a path or track through the lens fibers with a Hay's needle, for the escape of the foreign body. After this was done it was but necessary to bring a magnet tip to within two inches of the external wound, the foreign body fairly leaping out of the eye through its open pathway. The lens mass was then expressed without any trouble. Recovery was uneventful, a corrected vision of two-thirds of normal being later obtained.

Removal of Congenital Cataract.

DR. C. A. OLIVER exhibited a 9-year-old Hungarian boy, from whom he had successfully removed two congenitally opaque lenses by free discission, obtaining a corrected vision of normal in each eye. The case was of interest as showing the good effects of diametrically opposed forms of treatment in the two eyes, necessitated by an attack of secondary glaucoma from stoppage of lymph flow caused by a blocking of the pupillary area. He did not consider such a complication of any great moment in the young, otherwise healthy, eye as it rapidly subsided under appropriate treatment without any damage to the organ.

DR. SCHWENK presented a case of congenital cataract in a white male 30 years of age, the interesting point being that three brothers were similarly affected, while three sisters had normal eyes. Ten days previous, a free discission of the right lens was done. The lens rapidly swelled and several opaque pieces of lens matter fell into the anterior chamber. One week later, although intra-ocular tension was normal and the eye was quiet, much of the remaining lens material was extruded by means of a grooved spud. At present the eye is practically well.

The Immediate Result of Mules' Operation.

DR. C. A. OLIVER showed the immediate results of a Mules' operation in a case of panophthalmitis. The patient was a 23-year-old sailor who had lost his eye about a year previously from gonorrheal infection. As a large area of the sclerotic coat at the upper corneal limbus was softened and infiltrated, he took advantage of excising this part while converting the circular corneal area into a lozenge of sufficient size to admit the placing of the glass ball into the scleral cavity. In less than five days, without any reaction, the conjunctival sac was clean and the eyeball freely mobile. In accordance with a suggestion from the senior resident surgeon of the hospital, he had most successfully employed pressure bandages instead of the usual iced compresses. He will order a properly adapted artificial eye for the patient as soon as the socket becomes fixed in size.

PHILADELPHIA PATHOLOGICAL SOCIETY.

Dr. Frederick S. Packard in the chair.

Cerebellar Lesions.

DR. WM. G. SPILLER read a paper entitled "Cerebellar Lesions without Cerebellar Symptoms." The first specimen presented had been found at autopsy by Dr. W. S. Wadsworth, in the case of a man who had not presented any physical ailment. The man had been found in an unconscious condition, death following later. On examination the left vertebral artery was found to be smaller than the right, and there was considerable sclerosis of the left cerebral hemisphere.

Specimen No. 2, presented to him by Dr. W. E. Robertson, was from a woman 39 years of age, who had been addicted to alcohol. The patient was the mother of four children. She had for a long period complained of severe pain at the base of the brain which was always worse after each confinement. After the last labor the pain became more severe. In this case there had been some renal insufficiency. Her death had been sudden. At the autopsy the brain had been found congested and a tumor was present at the base of the brain, a portion of the growth extending into the fourth ventricle. The upper portion of the growth was cystic. She had never suffered from vertigo. The third specimen was from a patient 62 years old. During life the mind had been clear. Death was due to exhaustion. At the autopsy a tumor of the corpora quadrigemina was found.

DR. W. E. ROBERTSON, in discussing the second specimen, stated that the patient had suffered from albuminuria, and that she probably had marked nephritis. The eye-ground had never been examined.

DR. D. J. M. MCCARTHY said that he is studying a specimen of brain presented to him by Dr. S. Weir Mitchell. He has found a cystic glioma which involved the superior and inferior vermis without having produced any cerebellar symptoms.

Malignant Endocarditis.

DR. D. L. EDSALL presented specimens from a case of "Malignant Endocarditis." The patient was a girl of 18 years of age, and in whom the diagnosis was difficult. When admitted to the hospital she had considerable fever, tremor of the hands and cyanosis. The thyroid gland was considerably enlarged. She had been taking thyroid extract for some time, and it was at first thought that some of the symptoms might be due to thyroidism. Stenosis with regurgitation was present at the mitral leaflets. Some time later the blood was examined and showed the leukocytes to range between 7000 and 26,500. The cardiac dulness was continuous with the splenic dulness, and in the latter region pain was present. Blood had been taken from a vein and cultures showed streptococci, etc. At the autopsy the heart was found enlarged, and the pericardium adherent. On the mitral leaflets vegetations were present giving rise to almost complete obstruction. The kidneys and spleen showed infarcts, and a septic thrombus of the femoral vein was found.

DR. ALBERT WOLDERT spoke of a case of endocarditis occurring in his clinic at the St. Joseph's Hospital, the patient a girl of 9 years. On examining the heart a loud and rough systolic sound was heard. There had been slight inflammation in one ankle and one knee which had subsided within a few days. Afterward high and irregular fever with sweating and chilly sensations came on, and anemia was profound. In many respects it resembled a case of malignant endocarditis, but the child recovered, which argued against this view.

DR. W. E. ROBERTSON spoke of a case of endocarditis affecting the pulmonary valves, and in which the typhoid state had been present.

Melanotic Sarcoma.

DR. M. B. HARTZELL presented specimens of "Pigmented Epithelioma or Alveolar Melanotic Sarcoma." The tumor had been removed from the eyelid of a patient about 40 years of age. The growth was about the size of a pea and slightly ulcerated. It first appeared about 4 years ago, and at that time resembled a freckle. The neoplasm was composed of large cells with round or oval nuclei, the cells of which were arranged in an alveolar shape. A few giant cells could also be found. These growths probably belong to the epitheliomata, and are apt to lead to metastasis.

Sarcoma of Lung.

DR. NEWLIN presented a specimen of sarcoma of the lung. The patient had been under the charge of Dr. Arthur V. Meigs, of the Pennsylvania Hospital. In 1896 the man had been operated on for a tumor located in the scapular region. Another operation became necessary a year later. In 1899 the left arm, scapula, and clavicle were removed. In February, 1901, another operation was performed, but some time later he suffered from hemorrhages and death occurred. At the autopsy a fibrous, whitish tumor was found in the right lung, which showed consolidation. The pleura on this side was adherent. The aortic valves were thickened. Numerous fibrous nodules were found in the spleen. The mesenteric glands were infiltrated. The capillaries of the liver were dilated. The tumor was for the most part made up of spindle cells.

Sections of Blood-Vessels.

DR. ARTHUR V. MEIGS exhibited "Sections of Blood-vessels." The speaker stated that he had frequently had trouble in obtaining clear-cut sections of blood-vessels on account of the shrinking which always occurred postmortem. This change would also produce more or less twisting of the nuclei. In order to overcome this he has made a series of glass tubes the size of the blood-vessels, which can be inserted inside the vessels, while they are being hardened. After being imbedded complete and smooth sections can be made. By this method all the different coats of the arteries and their relations can be accurately studied.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Dr. W. L. Stowell, chairman.

Pathology of Typhoid Fever.

DR. MARTHA WOLLSTEIN briefly discussed this subject. She said that while water is the most frequent means of conveying typhoid bacilli into the human organism, milk plays a not unimportant part in children, and air conveyance is recognized by Osler as explaining certain epidemics. There is abundant evidence that the typhoid bacilli pass through the placenta and infect the fetus. The bacilli have also been found in the rose spots constituting the typhoid eruption, and in the urine in 25 per cent. of the cases examined in this way during the third week of the disease. For convenience, she divided the intestinal lesions found in children into the three following classes: 1, cases without characteristic intestinal lesions; 2, cases exhibiting few and limited lesions, and 3, cases presenting as deep and as extensive intestinal lesions as in the severest ones in adults. The number of red blood-corpuscles diminishes steadily until convalescence begins.

Value of the Widal Reaction.

DR. JOHN LOVETT MORSE, Boston, read a paper on this subject. He said that in 253 cases observed at the Boston City

Hospital, having a clinical diagnosis of typhoid fever, this reaction has been absent in only ten, thus giving 4 per cent. of failures. A dilution of one in ten has been employed in these examinations, and the time limit imposed was half an hour. He concluded that the Widal reaction was present in at least 95 per cent. of all cases, but seldom present before the second week of fever. Repeated negative tests were not sufficient to exclude typhoid fever, but a negative reaction followed by a positive reaction, using a dilution of one in fifty, is the strongest possible proof of the existence of typhoid. In a series of 164 cases of typhoid fever in children, this reaction has beeen positive in 77 cases. As a general rule, it is obtained rather earlier in children than in adults, and is weaker and more evanescent the younger the subject. The evidence of typhoid afforded by the reaction in early infancy is not quite as conclusive as in later life, because of the possibility of an infection *in utero*. It has been demonstrated that the agglutinating power is transmitted through the mother's milk, even after very long periods, but when so conveyed it soon disappears from the infant's blood.

DR. W. P. NORTHRUP reported an interesting case of an infant of 9 months in whom the Widal reaction was absent, although the case was clinically one of typhoid, and two or three other members of the same family were at that time in the hospital with undoubted typhoid. as shown by the clinical symptoms and by the presence of the Widal reaction. The speaker also commented on the fact that in many years of service among thousands of children in the New York Foundling Hospital, where the conditions are such as to be favorable to the introduction of typhoid in connection with children "farmed" out, he and the other attending physicians have not met with one undoubted case of typhoid fever among these children.

DR. E. LIBMAN said that an extensive experience with this reaction in both children and adults has demonstrated its great diagnostic value in cases simulating pneumonia and meningitis.

Meeting held April 4.

Dr. George L. Peabody, vice-president. in the chair.

The Duty of the Public to the Medical Profession.

DR. D. B. ST. JOHN ROOSA pointed out the many achievements of medical science in the nineteenth century as a reason for the public taking an interest in the work of the medical profession.

DR. WILLIAM H. THOMSON thought the public's lack of appreciation partly due to the erroneous belief that the practice of medicine is only a trade, and the medical profession a close, selfish and jealous corporation. He pleaded for the introduction into all our high schools, of instruction in the elements of anatomy and physiology in order that educated people may be able to appreciate at their true value the absurd claims of osteopaths, "Christian Scientists" and quacks in general.

DR. ANDREW H. SMITH enlarged upon this line of thought, averring that the medical profession is largely responsible for the gullibility of the public in all things medical, by failing to disseminate popular information regarding what the science of medicine has actually accomplished and is constantly doing. The world at large has a right to know these things, and it is our duty to tell them in language which they can understand. A more frank and open course would inspire confidence and silence criticism, now too often made because of ignorance.

DR. A. JACOBI said that the public is sufficiently appreciative of what it understood or thought it understood, and that physicians as a class are too apt to become so engrossed in their business as to neglect their duties as citizens.

MEDICAL SOCIETY OF THE STATE OF TENNESSEE.

Sixty-eighth Annual Meeting, held in Nashville, April 9, 10, and 11.

Address of President.

DR. J. A. CROOK, in his Presidential Address, stated that the state society was chartered by a special act of the legislature of Tennessee on Jan. 9, 1830, and held its first meeting in Nashville the first Monday in May, 1830. From these beginnings he said there are at present about thirteen hundred regular medical societies in the United States alone. If he were asked what, in the last century, has contributed most to the enlargement and extension of medical knowledge, and has been the most potent factor in promoting its far-reaching benefits, he should unhesitatingly answer, the medical society, by the stimulus it has given its members to put forth great efforts toward scientific research. The physician learns and advances in his profession in three ways: By reading textbooks and medical journals; by his own personal experience and by observation, and by the experience of his brothers as related in medical societies. Personal contact carries with it the privilege of asking questions, witnessing demonstrations, and becoming thoroughly familiar with the subjects under discussion. Attendance on societies broadens one's ideas and views, prevents one from falling into old ruts, and gives him a higher and nobler view of his calling. The interchange of ideas quickens perceptions, awakens mental activities and brings out the best there is in us. The champion of a new faith or a new discovery must stand in front of the torch-light of past experience and present knowledge; he must endure unflinchingly the scalpel of interrogation, suffer calmly the probe of criticism, and when the ordeal is over and he has had the opportunity of defending his position, his wounds may be closed with the stitches of apology, and they will usually heal by first intention. Many a bump of self-esteem that would enlarge to the dignity of a cyst, if its owner stayed at home, is punctured readily enough with the bistoury of an exploratory question, in the amphitheater of the medical society.

This is an age of organization and progress, and if the medical profession would keep pace with others and reach the highest destiny, it must combine forces and intellects and strive to reach a common and definite aim. Instead of having four or five hundred names on the roll in Tennessee, there ought to be two thousand, and this result will be obtained when the public is given to understand that the status of the physician is fixed by his profession, and that to be an active member in his own county and state medical societies, as well as the AMERICAN MEDICAL ASSOCIATION, at least is not only an honorable distinction which no one can afford to disregard, but likewise an imperative duty which he owes to his profession; when, in short, the public shall have been given to understand that membership and active participation in medical societies is a much better criterion of professional fitness and eminence than loafing in the back-room of drugstores and relating wonderful professional achievements to the habitues of such places, then will the medical profession be regarded with a respect it has never hitherto received. And when doctors find that membership in medical societies is regarded as an index of higher professional attainments and a greater devotion to the welfare of humanity than anything else, just that soon will the question of organization be settled, and instead of the officers of medical societies being obliged to beg and implore physicians to join and take an active part in such organizations, they will be only too glad to enroll their names in order to secure the honor and prestige connected with such membership.

The ablest and most renowned men in the profession—the men who have given honor and dignity to their special calling, have ever been those who have most regularly attended the medical societies.

Another way in which the medical societies have been of value to the public is in raising the standard of medical education. Through their efforts nearly every medical college in the United States has raised the requirements for admission to a higher plane, and those for graduation to attendance on four years' course of lectures. Thus the public is assured of a more cultured, better educated and better competent class of physicians as the years roll on.

Finally, in order for the Tennesse State Medical Society to accomplish its best results and secure its greatest influence, a medical society should be organized in every county in the state, to which should belong every regular practitioner in that county. Every regular physician in the state should be interested in the general welfare of the profession, and every county society should be brought into a close relation with the state organization. To obtain recognition for its demands, the

society must increase its membership until all regular physicians are connected with it. It should then make its influence felt in all that pertains to the public welfare, and act as a unit in all matters that tend to accomplish the objects for which it was organized.

The following officers were elected for the ensuing year: President, Dr. Deering J. Roberts, Nashville; vice-president for East Tennessee, Dr. William B. St. John, Bristol; vice-president for West Tennessee, Dr. L. A. Yarborough, Covington; vice-president for Middle Tennessee, Dr. J. B. Murfree, Jr., Murfreesboro; secretary, Dr. A. B. Cooke, Nashville; treasurer, Dr. W. C. Bilbro, Murfreesboro.

Memphis was selected as the place for holding the next annual meeting, the second Tuesday in April, 1902.

Therapeutics.

Treatment of Tuberculosis.

Solis-Cohen, in *Merck's Archives*, states that the best antitubercular agents are the iodin and the creosote groups. The first group is better adapted to the early stages, the second to the later stages. He regards iodoform as the best agent of the first group and it should be given in comparatively large doses and over long periods. Begin with one-half grain doses three times a day and increase gradually until within two or three months the dose reaches five grains daily. He recommends the following formula:

℞.	Iodoformi	gr. i-iii	06-20
	Strychninæ sulph	gr. 1/40	0015
	Arseni iodidi	gr. 1/12	005
	Balsami Peruviani	gr. ii-v	12-30

For the Obstinate Diarrhea in Tuberculosis

The following is recommended:

℞.	Ichthoformi	gr. v	30
	Tannalbin	gr. x	60
	Bismuthi subgallati	gr. x	60
	Codeinæ	gr. ¼	015
	Ol. menthæ pip.	m. ¼	015

M. Ft. chartula No. i. Sig.: One such powder every two to six hours.

Ichthoform is a compound of ichthyol and formaldehyde. It is a blackish-brown powder, odorless and tasteless. It is insoluble in water.

Cough in Phthisis.

Daly, in the *New York Med. Jour.*, recommends for the hard, dry cough of phthisis the following:

℞.	Camphoræ	gr. ii	12
	Heroin	gr. 1/12	005
	Creosoti	m. i	06

M. Ft. pilula No. i. Sig.: One as needed to control the cough.

Apocodein in Constipation.

Combemale, in *Progrès Médicale*, recommends the following formula:

℞.	Apocodeinæ hydrochloridi	gr. viiss	45
	Aq. destil.	℥iss	48

M. Sig.: Inject thirty drops subcutaneously.

The properties of apocodein are very similar to apomorphin. It is prepared from codein by a process similar to the manufacture of apomorphin from morphin.

Bromids in Epilepsy.

L. P. Clarke, of the Craig colony of epileptics, as noted in *Amer. Med.*, draws the following conclusions concerning the use of bromids in epilepsy: The bromids still hold the important place in treatment of epilepsy. Tonics must accompany their administration. The bromid must be given gradually to ascertain the patient's tolerance; baths, high enemas, alimentary antiseptics, massage and electricity are absolutely essential to bromid-medication. Salt starvation or semi-salt starvation is a great adjunct to bromid treatment.

[In administering tonics with bromids, Bechterew recommended the Adonis vernalis, in the form of the infusion, in combination with the bromids as a heart and vasomotor stimulant. Adonis vernalis is somewhat similar to digitalis in its action, but not so powerful. Flechsig advised the administration of opium, preceding the use of bromids. He commenced with one-quarter to one-half grain of the pulverized opium and gradually increased the dose until the patient was taking a daily dose of five or six grains at the end of six weeks; then he employed the bromids.]

As a Douche in Leucorrhea.

Burtenshow, of New York, in an article in the *New York Med. Jour.*, states that a troublesome leucorrhea in the majority of instances will be checked after a very few applications of the douche, due to the toning up of the vaginal and uterine mucosa. The water may be used without any medicament whatever, but if the accompanying leucorrheal discharge is profuse, a tablespoonful of the following mixture can be added to the last quart of water remaining in the douche bag at the termination of the injection:

℞.	Pulv. albuminis		
	Zinci sulphatis		
	Acidi carbolici		
	Sodii biboratis, āā	℥i	32
	Aquæ	℥vi	192

M. Sig.: Use as above stated.

He further states that large hot water vaginal irrigations should never be employed by healthy pregnant women, for the reason that they reduce the bactericidal power of the vaginal secretions.

To Produce Diaphoresis.

Von Graefe recommends the following combination to produce diaphoresis:

℞.	Pulv. camphoræ	gr. ss to iss	03-09
	Pulv. opii	gr. ¼-½	015-03
	Potassii nitratis	gr. iv	25
	Sacchari	3ii	8

M. Ft. chartula No. i. Sig.: One powder to be taken in a hot drink at bed time.

As an Antiseptic and Lubricant for Instruments.

Prof. Necker, in *Jour. des Practiciens*, states that the following combination possesses sufficient antiseptic properties and is a splendid lubricant for use on instruments to be introduced into the vagina or urethra:

℞.	Hydrarg. chloridi corros.	gr. 3/10	02
	Aquæ	3vi	24
	Pulv. saponis	℥iss	48
	Glycerini	3vi	24

M. Sig.: As an application to instruments.

Treatment of Gonorrhea by Hot Saline Solutions.

Dr. Woodruff, as noted in the *Med. Press*, states that he has derived excellent results from the use of hot saline injections in the treatment of gonorrhea. He administers these injections as hot as can be borne every two or three hours and sometimes as often as every hour. He gives no medicine by the mouth and states that the average duration of the disease is from ten to twelve days.

Treatment of Ascites.

Dr. A. H. Bigg, of Detroit, in *Med. Record*, has used the following prescription containing elaterium or rather its active principle elaterin:

℞.	Elaterin	gr. 1/15	004
	Strychninæ sulphatis	gr. 1/40	0015
	Glonoini	gr. 1/200	0003
	Ext. digitalis	gr. ¼	015
	Caffeinæ citratæ		
	Pulv. caryophylli āā	gr. i	06

M. Ft. cap. no. i. Sig.: One capsule every three to six hours.

Dr. Bigg emphasizes the importance of pushing the treatment. Four to six copious evacuations per day may be maintained by the above formula until permanent relief is obtained.

The Administration of Digitalin.

Dr. Martinet, of Paris, as noted in *Ther. Gazette*, states that digitalin is generally prescribed in France by means of the following formula:

℞. Crys. digitalin (chloroformic).....gr. xv 1
Glycerini .....ʒx 300
Aq. destil.....ʒv 150
Alcoholis (95 per cent.) q. s. ad.....Oii 1024
M. Sig.: Fifteen drops in water three times a day.

Treatment of Cutaneous Pruritus.

Eichhorst recommends the following outline of treatment for cutaneous pruritus:

As an ointment.

℞. Acidi carbolici.....gr. 75 5
Lanolini .....ʒvi 24
Adipis .....ʒvi 24
M. For inunction twice daily.

Friction with lemon juice or ablutions with dilute vinegar affords relief. Internally the following is given:

℞. Potassii bromidi .....ʒiiss 10
Ext. belladonnæ.....gr. ivss 27
Acidi carbolici.....gr. xv 1
Ext. glycyrrhizæ q. s.
M. Ft. pil. No. l. Sig.: One pill four times a day.

A New Treatment for Anorexia.

Robin, of Paris, according to the *Ther. Gazette*, states that the pure solution of sodium persulphate is of great benefit in treatment of the ordinary forms of anorexia as well as in consumption. The drug is given as follows:

℞. Sodii persulphatis.....ʒss 2
Aquæ .....ʒx 300
M. Sig.: One soupspoonful a half hour before lunch and dinner.

Treatment of Smallpox.

Dr. Legrand, as noted in *Ther. Gazette*, states that one frequent symptom of smallpox is considerable gastric intolerance with frequent vomiting of bile. In such conditions the following combination is recommended:

℞. Cocainæ hydrochloratis.....gr. ii 12
Syrupi etheris
Syrupi codeinæ
Aq. menth. pip. ãã.....ʒii 64
M. Sig.: One dessertspoonful every hour.

For general treatment he uses the following formula:

℞. Ammon. acetatis.....gr. xlv 3
Tinct. opii.....ʒi 32
Elix. cinchonæ .....ʒii 64
Elix. simplicis q. s. ad.....ʒvii 224
M. Sig.: One soupspoonful every hour.

Calcium Chlorid in Treatment of Menorrhagia and Typhoid Enterorrhagia.

The coagulating properties of calcium chlorid have been utilized by a French confrère, according to the *Semaine Méd.* of March 20, as a prophylactic measure against menorrhagia, in the cases in which the menstruation is painless but the flow excessive. He prescibes for a week before the expected period two tablespoonsful a day of the following:

℞. Calcii chloridi.....ʒiiss 10
Syrupi .....ʒxv 60
Aquæ .....ʒvi 180
M. Sig.: Two tabespoonsful a day.

This treatment repeated each month for two or three times has always cured the pathological excess of the menstrual flow. Nephritis is a contraindication. The enterorrhagia in typhoid fever is also favorably affected by calcium chlorid. Mathieu reports eight cases succsessfully treated by an injection once or twice a day of a liter of water at 48 C. containing 4 gms. of calcium chlorid, supplemented by 2 gm. administered by the mouth in an aqueous solution during the day, and measures to immobilize the intestines. These hot injections clear the intestines of extravasated blood and thus suppress a new source of intoxication and fever.

Medicolegal.

Compensation for Cold and Neuralgia.—The Court of Civil Appeals of Texas holds, in Houston, East and West Texas Railway Company vs. Jackson, that a judgment for $500 in favor of a passenger wrongfully expelled from a train, can not be considered excessive in amount where he got wet and contracted a cold and had neuralgia by reason of the exposure, and was confined to his bed for fifteen days.

Seven Thousand Dollars for Loss of Leg.—The fourth appellate division of the Supreme Court of New York holds, in the personal injury case of Cosselmon vs. Dunfee, that $7,000 cannot be said to be an excessive award of damages for the loss of a leg by a young, healthy man, taking into account also the pain and suffering he endured, where he was so injured as to require the amputation of the leg between the knee and hip.

Thirty-five hundred Dollars for Permanent Injuries.—In Mowbray vs. the Brooklyn Heights Railroad Company, the second appellate division of the Supreme Court of New York holds that where a man of about 50 years of age was thrown out of a carriage by its being run into by a street car, and was permanently injured, his condition growing progressively worse from the time of the accident, and he had contracted doctor bills aggregating nearly $600, verdict in his favor for $3500 could not be considered so unreasonable as to warrant this court in interposing its judgment for that of the jury. The nature of the injuries are not further described.

Not All Ambulances Given Right of Way by Ordinance.—In the case of Dillon vs. the Nassau Electric Railroad Company, an action brought to recover damages for injuries sustained by a passenger in a street-car that had a collision with an ambulance, the second appellate division of the Supreme Court of New York holds that it was reversible error to instruct the jury to the effect that the ambulance had the right of way. There was a city ordinance giving the right of way to "ambulances of the department of health," and the ambulance in question was under the jurisdiction of that department. But it did not belong to the department, and the court holds that there was not sufficient evidence to establish the fact that this ambulance was within the ordinance. If the ordinance related to all ambulances, there was no reason apparent, it says, why general words should not have been used embracing all, for it is assumed that all the ambulances in use are in some sense under the jurisdiction of the health department.

When no Presumption of Suicide—Use of Verdict.—The Supreme Court of Michigan holds, in the case of Wasey vs. the Travelers' Insurance Company, that it was error to instruct the jury that the presumption was that the insured did not commit suicide, whether sane or insane, when he was insane and the evidence showed that his insanity was of a nature usually attended with suicidal tendencies. It is to do violence to the facts, the court declares, to say of a man thus afflicted, for example suffering from melancholia agitata as the insured was shown to be, that there is nevertheless a presumption that he did not do the thing which men in his state usually or commonly feel impelled to do. Moreover, the court takes the ground, contrary to some authorities, that the verdict of a coroner's jury was not admissible as original evidence of the fact that the insured committed suicide. In other words, it says that it can not see any good reason why such a verdict should be either conclusive or evidence against a stranger to the proceeding.

Cannot Testify as to Patient's Mental Capacity.—The Supreme Court of California holds, in re Nelson's Estate, that, under the provisions of the Code of Civil Procedure, a physician can not testify as to the mental capacity of a patient he had make a will where his information on the subject was acquired by him from the patient and from observing him

while he was in attendance upon him for the purpose of prescribing for him as his physician. It says that the information which a physician acquires from his patient for the purpose of prescribing for him is given for the benefit of the patient alone, and not for the purpose of creating a right in others.

Imbecility as Defense to Crime—Province of Experts.—The Supreme Court of Missouri, Division No. 2, holds that the law in its more particular bearing on the homicide case of State vs. Palmer was very fairly presented to the jury by instructions that mere weakness of intellect will not shield one who commits a crime, and that here, although the jury might believe from the evidence that the defendant was mentally deficient in some degree, yet unless they were reasonably satisfied by the evidence that, at the time the alleged crime was charged to have been committed by him, his mental faculties were so weak, and his mind so deficient, that he was unconscious at the time of committing the act that it was wrong, and that he ought not to do it, and that he had not the ability or mental capacity to choose between right and wrong, they should find him guilty as charged in the indictment. Every man is presumed to be sane, and to possess a sufficient degree of reason to be responsible for his crimes until the contrary is proven, and where insanity or mental incapacity or imbecility is interposed as a defense the law requires the defendant to prove to the reasonable satisfaction of the jury, and, to establish such defense, it must be proven, to the reasonable satisfaction of the jury—that at the time of committing the act the defendant was laboring under such defect of reason, from natural deficiency or disease of the mind, as not to know the nature and quality of the act he was doing, or, if he did know it, that he did not know he was doing what was wrong. But a case where weak-mindedness, usually called "imbecility," is the defense, the court considers very different from one where the defense is insanity either in acute or chronic form, and it declares that the rule is not applicable which holds that where a habitual chronic state of insanity is shown to have existed, extending all through the life of the defendant, the burden of proof is on the state to show a lucid interval at the time of the killing. Furthermore, the very point at issue being whether the defendant could distinguish right from wrong in doing the act charged as criminal, the court holds that this was for the determination of the jury, and an expert could not be allowed, by answer to an improper question, to usurp the province and functions of the triers of the facts. An expert witness, it says, can not be asked his opinion as to whether the accused was capable of judging between right and wrong, nor to express an opinion that the accused acted under an insane delusion or was impelled by an irrepressible impulse. And an expert witness may give his opinion as to the state of mind of the accused, but not as to his responsibility, that being a question for the jury. And, it adds, it has been generally, if not universally, held, in cases where the objection has been made that the question covered the point in issue, that the experts can not be asked the broad question whether they considered the person whose sanity is being litigated is out of his mind, or whether his mind was so affected as to be unfit to transact business; or to give their opinions on the whole case, as it would necessarily include a determination of the facts. Moreover, the court thinks that the testimony of a physician who has not studied the progress of the disease in question, and whose opportunities have been limited for observing the personal habits and conduct of the person whose sanity is questioned or who is alleged to be an imbecile, possesses little, if any, value.

Not Libelous to Contradict Physician About Smallpox.—The Court of Appeals of Kentucky says that the substance of the petition, in the action for libel of Manire against Hubbard and another, was that the plaintiff was a physician, with a large and lucrative practice, and that the defendants, knowing this fact, had, on a certain date, falsely and maliciously caused to be published in a certain newspaper a writing, signed by them, stating that there were no cases of smallpox in a certain town, nor had been, as set out in the letters of the plaintiff and another physician, published in said newspaper; that the negroes who were said to have the smallpox had no breaking out nor eruption until the attending physician, the plaintiff, applied a salve to their faces, and caused it to break out, "meaning thereby that the plaintiff had committed an unprofessional and disgraceful act as a physician." To this petition the defendants interposed a demurrer, which the lower court sustained. This made the sole question to be determined on appeal the one of whether or not the words in the original petition were libelous. The rule, which the court of appeals quotes, is that, to sustain an action for libel, the plaintiff must allege special damage, or the nature of the charge must be such that the court can legally presume that he has been degraded in the estimation of the public, or has suffered other loss, either in his property, character, or business, in his domestic and social relations, in consequence of the publication. Words which are published in connection with one's profession or calling, which impute to him ignorance generally in his business or profession, or such ignorance or incapacity as unfits him for its proper exercise, are actionable per se, or in and of themselves; but it is not ordinarily actionable to charge one in a business or profession with want of skill or ignorance in a particular transaction. And it was not libelous, the court holds, for the defendants to publish that there were no cases of smallpox in the town mentioned, as this was a question upon which laymen, as well as professional experts, were entitled to entertain and might express an opinion. The additional words, "That the negroes who were said to have the smallpox had no breaking out until the attending physician applied a salve to their faces, which caused it to break out," the court further holds, did not of themselves convey the meaning which the plaintiff would attribute to them. There was no charge that this was improper treatment, or that it was resorted to from any corrupt or wrongful motive on the part of the plaintiff. Nor does the court think that the words necessarily of themselves imported that the plaintiff was guilty of unprofessional conduct, or reflected upon his integrity. Wherefore, the court is of the opinion that the words complained of were not actionable per se, or in and of themselves, and it holds that, in the absence of an averment of special damage, the petition was not goot on demurrer, and, consequently, that the demurrer was properly sustained.

Current Medical Literature

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), April 27.

1 *An Analysis of My Vaginal Ablations in 181 Cases of Pelvic Inflammation and Uterine Fibroid Degeneration. W. R. Pryor.
2 *The Good and Bad Effects Obtainable from Digitalis Used as a Therapeutic Agent. (Concluded.) William Henry Porter.
3 *Logic of Hydrochloric Acid Therapy, Restoration of Lost Gastric HCl Secretion by Medical and Surgical Methods. (Concluded.) John C. Hemmeter.
4 *Hyperplastic Colitis: Extirpation of the Entire Colon, the Upper Portion of the Sigmoid Flexure and Four Inches of the Ileum. Howard Lilienthal.
5 *The Value of Intestinal Antiseptics with Simple Aseptic Pads in Obstetric Practice. Harriet E. Garrison.
6 *Gastroptosis. Alexander McPhedran.
7 Pneumonia—A Historical Review of its Treatment. William C. Johnson.

New York Medical Journal, April 27.

8 *On Tenontitis and Tenontothecitis Prolifera Calcarea. Carl Beck.
9 *Combined Intranasal and Extranasal Operation for the Correction of a Congenital Concave Vertical and Lateral Deformity of the Nose, with the Report of a Case. Burton S. Booth.
10 *Hospital Appointments. Are They Open to Women? Helen McMurchy.
11 *A Contribution to the Explanation of the Nature of the So-called Predisposition to Infection with Staphylococci. F. W. Gaertner.
12 *Pneumonia, Its Proper Management in Children; Hygienic, Drug, and Dietetic Details. Louis Fischer.
13 *Peripheral "Anesthesia-Paralysis"—Report of an Unusual Case of Bilateral Brachial Paralysis Occurring During Narcosis (for Appendicitis). Walter M. Brickner.
14 The Relation of Arterial Changes to the Heart. Beverley Robinson.

Medical Record (N. Y.), April 27.

15 *Experiences with Tracheotomy. John Rogers, Jr.
16 Recurrent Vomiting of Nervous Origin. Louis Fischer.
17 *Tobacco as a Factor in Glycosuria. Heinrich Stern.
18 Pityriasis Versicolor of the Face. William S. Gottheil.
19 *An Extreme Case of Simple Anemia. Rolfe Floyd and William J. Gies.
20 Albuminuric Retinitis in Pregnancy; Premature Labor; Death in Utero of Twin Child; Puerperal Convulsions; Hemiplegia; Acute Mania; Death. Joseph N. Study.

Philadelphia Medical Journal, April 27.

21 *Scurvy in Infants. Louis Starr.
22 *Notes on Leukemia with a Report of Three Cases. Charles S. Jewett.
23 *Clinical Experiences with Adrenalin. Emil Mayer.
24 Obstructions and Tabulated Report of the Result of One Hundred and Fifty Operations for Appendicitis. Leon Brinkman.
25 *Points Connected with the General Etiology, and Pathogenesis of Diabetes Mellitus. Heinrich Stern.

Boston Medical and Surgical Journal, April 25.

26 *Remarks on Anesthesia—General, Local and Spinal. Maurice H. Richardson.
27 *Experience in Search of a Cure for Asthma in the Far Southwest; With Observations on the Comparative Value of Different Sections in Respiratory Diseases. Robert Bell.
28 *Chorea During Pregnancy. F. S. Newell.
29 *Notes on X-Light. William Rollins.
30 A Special Form of Phlegmon of the Neck. F. P. Emerson.

Medical News (N. Y.), April 27.

31 The Study of Internal Medicine. William Osler.
32 The Relation of the Student of Medicine and the Recent Graduate to the Field of Surgery. George Ryerson Fowler.
33 The Medical Man in the Navy. W. K. Van Reypen.
34 The Municipal Health Department System, and more Especially in Reference to its Advantages and Disadvantages as an Opening for the Young Medical Graduate. Arthur R. Guerard.
35 The Advantages of Examining for Life Insurance. Brandreth Symonds.
36 The Outlook for the Young Physician in State Hospital and Sanitarium Work. Carlos F. MacDonald.

Cincinnatti Lancet-Clinic, April 27.

37 Practice of Obstetrics in Cincinnati at the Present Day. Magnus A. Tate.
38 *A Case of Congenital Typhoid. Mark A. Brown.

St. Louis Medical Review, April 27.

39 *Review of Hydrophobia. C. Fisch.
40 *Recent Changes in the Pasteur Treatment. John C. Morfit.

Medical Age (Detroit), April 10.

41 Food Adulteration in its Relation to the Public Health. H. W. Wiley.
42 Remarks on Case-Taking and Methods of Diagnosis: Locomotor Ataxia. D. R. Brower.
43 Cod-liver Oil and How to Give it. A. N. Bell.

Virginia Medical Semi-Monthly (Richmond), March 22.

44 So-called "Conservative" Treatment of Appendicitis. I. S. Stone.
45 A Case of Papillomatous Cyst in a Child Four Years and Nine Months Old. Manning Simons.
46 Extrauterine Pregnancy, with Report of a Case of Simultaneous Pregnancy in Both Tubes. C. R. Robins.
47 Dietetic Hematuria, with Some Remarks upon Oxaluria as a Cause. John D. Thomas.
48 Infant Feeding. J. Edward Tompkins.
49 Epidermic Medication—Vel ubi Irritatio ibi Fluxus. A. B. Brooking.

April 12.

50 One Hundred and Twenty-five Consecutive "Abdominal Operations" Occurring in My Service with Dr. George Ben Johnston, with Remarks. Charles R. Robins.
51 Unsanitary Condition of the Virginia Penitentiary. Charles V. Carrington.
52 Albuminuria without Manifest Organic Renal Lesions. W. A. Deas.
53 Some Interesting Cases of Headache Due to Nasal Trouble. Joseph A. White.
54 Pathology of the Liver. M. D. Hoge, Jr.
55 A Case of Severe Mastoid Neuralgia. John Dunn.

The Ophthalmic Record (Chicago), April.

56 *Some Results of Dr. Allport's Sight Tests Applied to Chicago School Children. Chas. C. Krauskopf.
57 *Gonorrheal Ophthalmia with Complications. Report of Cases. Albert E. Bulson, Jr.
58 *A Case of Non-comitant Ribbon-like Keratitis, with Remarks. M. F. Weymann.
59 The Dioptric Power of the Cornea: A Reply to Dr. Weiland's Criticism. W. N. Suter.

Interstate Medical Journal (St. Louis), April.

60 Aphasia; Sciatica; Neurasthenia; Progressive Muscular Atrophy Associated with Locomotor Ataxia; Multiple Neuritis; Brown-Sequard's Paralysis; Progressive Muscular Atrophy. Daniel R. Brower.
61 Briefs on the Surgery of the Genito-urinary Organs. G. Frank Lydston.
62 Use of Silver in Surgery. Edward Wallace Lee.
63 "Powder Monkey." J. J. M. Angear.
64 Etiology and Treatment of Diabetes Mellitus. Frank M. Floyd.
65 Report of Case of Primary Lupus of Tongue. John C. Murphy.

Archives of Pediatrics (N. Y.), April.

66 The Blood in Infancy and Childhood. (To be concluded.) Alfred Stengel and C. T. White.
67 *Enteric Fever in Childhood. Wm. L. Stowell.
68 An Unusual Case of Erythema Multiforme. Floyd M. Crandall.
69 Duodenal Ulcer in an Infant of Ten Months. Vanderpoel Adriance.
70 Apparent Cure of a Case of Frequent Convulsions, Probably Epilepsy. Anna R. Lapham.
71 A Case of Head-nodding Associated with Spasmodic Torticollis. John H. Jopson.

Western Medical Review (Lincoln, Neb.), April 15.

72 *A Consideration of the Different Operative Procedures in the Treatment of Displacements of the Uterus. O. Beverly Campbell.
73 Removal of the Superior Maxilla Through the Mouth. Alexander Hugh Ferguson.
74 Two Cases of Cesarean Section and one of Rupture of the Uterus in which Abdominal Section was Necessary. J. Clarence Webster.
75 The Origin and Uses of the Appendix, Together with a Short Treatise on Appendicitis. Wesley Jones Morrison.

Cleveland Journal of Medicine, April.

76 On the Value of the Leucocyte Count in the Diagnosis and Prognosis of Appendicitis, with a Report of Cases. E. H. Season.
77 Report of a Case of Abscess of the Brain in a Child Sixteen Months Old. F. E. Bunts.
78 Exophoria as a Cause of Asthenopia. William E. Bruner.
79 A Large Rhinolith. John M. Ingersoll.
80 Two Unusual Cases of Intubation. M. Borts.
81 Report of a Case of Hysterectomy for Fibroid with Retained Placenta, Two Cases of Extrauterine Pregnancy, and a Case of Laparotomy for Intussusception with Recovery. F. F. Skeel.
82 Case of Club-foot in an Adult. William E. Wirt.
83 Cases of Diphtheria Treated by Antitoxin. W. E. Hart.

Medicine (Chicago), April.

84 *Intrauterine Periods of Stress. Jas. G. Kiernan.
85 *Intestinal Suture, All Knots Inside. F. Gregory Connell.
86 Acute Intussusception in an Infant; Operation, Recovery, Relapse in Three and One-half Months; Second Operation, and Recovery. Philip Schuyler Doane.
87 *Is there Such a Constituent of the Urine as "Ureine?" Walter S. Haines and Charles S. Woods.

Kansas City Medical Record, April.

88 Report of a Case of Perforating Wound of the Eyeball. J. W. Sherer.

Women's Medical Journal (Toledo, Ohio), March.

89 Hyperesthesia of the Uterus During Pregnancy. Helga Ruud.
90 The Medical Woman's Temptation and How to Meet It. Jennie G. Oreman.

New Yorker Medicinische Monatsschrift, March.

91 Dammschutz bei der Geburt der Schultern. Gustav Schirmer.
92 Ein Fall von Actinomycosis. Leonard Weber.
93 Ueber den Therapeutischen Werth der Eisensomatose. L. A. Ewald.

Medical and Surgical Monitor (Indianapolis), April 15.

94 Dental Neuralgia. S. H. Creighton.
95 Unusual Forms of Hemophilia—Report of Cases. John L. Masters.

Texas Clinic (Dallas), January.

96 Surgery as a Specialty. Samuel E. Milliken.

Indiana Medical Journal (Indianapolis), April.

97 Problem of Appendicitis from the Medical and Surgical Points of View. Robert Abbe.
98 *On the Advantages of the Early Removal of Benign Tumors. E. D. Clark.
99 Judicial Autopsy: Death from Angina Pectoris. R. N. Todd.
100 Case Report—Exophthalmic Goiter. Charles A. Stafford.

Iowa Medical Journal (Des Moines), April.

101 Inflammation of the Sigmoid and Colon. R. D. Mason.
102 Ethics in the Diagnosis and Treatment of Venereal Diseases. A. R. Rogers.

Medical Sentinel (Portland, Ore.), April.

103 Some Points Often Overlooked in the Diagnosis and Treatment of Common Fractures of the Long Bones. R. C. Hill.
104 Abortion and Infanticide from Medicolegal Standpoint. W. W. Watkins.
105 Earache: Aniline in Aural Surgery. John A. Donovan.
106 Report of a Third Series of Twenty-five Operations for the Radical Cure of Hernia. J. B. Eagleson.

Medical Examiner and Practitioner (N. Y.), April.

107 Tetanus. Thos. C. Craig.
108 Exceptions to the Rule. G. S. Stebbins.
109 *Diagnosis and Prognosis of Chronic Interstitial Nephritis. Edward F. Wells.
110 *Methods of Examining for Industrial Insurance. W. S. Royce.
111 Practical Observations on Infantile Diarrhea. F. H. Pirnat.

Medical Times (Philadelphia), April.

112 Gynecological Conduct. W. Oakley Hermance.
113 On the External and Internal Employment of Argentamine. Dr. Bergel.
114 Aspirin. A. A. Nefe.

St. Louis Courier of Medicine, April.

115 Mesogastrium—Omentum Majus. (To be concluded.) Byron Robinson.
116 Pott's Disease of the Spine—Diagnosis and Treatment. D. W. Marston.
117 Appendicitis—Intracapsular Fracture of the Neck of the Femur. Robert T. Morris.
118 Hysterical Astasia-Abasia in a Child Aged Two Years and Four Months. M. W. Hoge.

Maryland Medical Journal (Baltimore), April.

119 *Epidermolysis Bullosa Hereditaria, with Report of the First Case of the Disease in the Negro Race. Henry Lee Smith. Notes on the Blood and Vesicle Cells. Thomas R. Brown.
120 *Koplik's Spots: Their Value in the Diagnosis of Measles, Particularly in Private Practice. John Zahorsky.
121 *Mycosis Tonsillaris. Hughlett Hardcastle.

Dominion Medical Monthly (Toronto), April.

122 Popular Delusions about the Insane. Daniel Clark.
123 The Surgical Treatment of Cleft Palates. Truman W. Brophy.

Vermont Medical Monthly (Burlington), March.

124 Abdominal Palpation in Obstetrics. Frederick E. Clark.
125 Coughs: Their Suppression and Cure. Louis DeLorne.

American Journal of Obstetrics (N. Y.), April.

126 Notes on Vaginal Celiotomy; with Report of Cases. Thomas J. Watkins.
127 *On Puerperal Infection: With Special Reference to Douching and the Practical Value of Bacterial Examination. Augustus Wadsworth.
128 *Alexander's Operation: A Method of Picking up with Ease the Round Ligament at the External Abdominal Ring. LeRoy Broun.
129 On the Importance of Precise Definitions of Diphtheria in the Valuation of Antitoxin Therapy. Adolph Rupp.
130 Treatment of Prolapsus Uteri. E. E. Montgomery.
131 *The Relation of Ovarian Disease to Insanity and its Treatment. A. T. Hobbs.
132 *Cerebral Injuries During Birth as a Cause of Infantile Mortality. E. E. Morse.
133 Double Ectopic Pregnancy, Both Sides Ruptured: Operation; Recovery. George H. Noble.
134 *Ovarian Cyst and Suppurating Hematocele. Salpingitis with Obscure Localizing Symptoms. George E. Shoemaker.
135 *Cancer of the Cervix and Pelvis Following Supravaginal Hysterectomy. Charles P. Noble.
136 Dermoid and Other Cysts of the Ovary: Their Origin from the Wolffian Body. (To be continued.) Samuel W. Bandler.

Colorado Journal of Medicine (Denver), March.

137 Rest or Open-Air Exercise in the Treatment of Phthisis. Which? J. Frank McConnell.
138 Two Cases of Cranial Injury. J. A. Patterson.
139 Attitude and its Relation to Diseases. H. A. Armstrong.

Carolina Medical Journal (Charlotte), April.

140 General Remarks on a New Method of Treatment. (Heroin). I. H. Gardner.
141 The Treatment of Gastric Ulcer. Charles W. McIntyre.
142 Pathology of the Liver. M. D. Hoge, Jr.
143 Use of Bromids in Hysteria, Delirium, etc. J. S. Murphy.
144 Some Practical Suggestions in Therapy, the Result of Personal Observation. B. M. Baker.

American Journal of Surgery and Gynecology (St. Louis), April.

145 *Treatment of Acute Peritonitis. Byron Robinson.
146 Report of a Successful Splenectomy. T. A. Ashby.
147 *Anomalies of the Mesentery as a Causation of Ileus and of Appendiceal Abscess in the Left Iliac Fossa. Valdemar Pleth.
148 *Normal Menstruation. Geo. J. Engelmann.
149 A Case of Papillomatous Cyst in a Child Four Years and Nine Months Old. Manning Simons.
150 *The Treatment of Cancer of the Female Breast. James Bell.
151 Wandering Kidney. Emory Lanphear.
152 Poisoning from the Application of Tincture of Iodin and Alcohol to the Cervix Uteri. G. Leo Hagen-Burger.

Pacific Medical Journal (San Francisco), April.

153 Inflammation of the Mastoid Process. B. F. Church.
154 No Specific Cure for Tuberculosis. Ethan H. Smith.
155 A Brief Contribution to the Treatment of Gonorrhea. M. Schirman.
156 Subarachnoidean Injection in Case Where General Anesthesia Could Not Be Carried Out. J. F. Conlan.

Texas Medical Journal (Austin), April.

157 Two Unique Cases of Renal Hemorrhage. J. P. Oliver.
158 Some Remarks on Abdominal Surgery. A. L. Hathcock.
159 Placenta Previa. E. D. Stokes.

Canada Lancet (Toronto), April.

160 Notes on Hydrochloric Superacidity, with Reports of Cases. Graham Chambers.
161 Latent Appendicitis. J. A. Grant, Jr.
162 Radical Cure of Large Umbilical Hernia. W. J. Hunter Emory.

Kingston Medical Quarterly, January.

163 Myxadenitis Labialis. G. C. T. Ward.
164 The Causation of Tuberculosis. W. T. Connell.
165 Diagnosis of Tuberculosis. John Herald.
166 Climatic Treatment of Pulmonary Tuberculosis. A. R. B. Williamson.
167 Laryngeal Tuberculosis. J. C. Connell.
168 Osteosarcoma of Forearm. W. G. Anglin.
169 The Outlook of Medicine. E. Ryan.
170 Melanosarcoma of the Female Urethra. D. E. Mundell.

AMERICAN.

1. **Vaginal Hysterectomy.**—The vaginal radical operation, while apparently abandoned by some of its early advocates, is considered by Pryor as far superior in the greater proportion of operations now performed through the abdomen. Analysis of his cases shows that he has had 83 per cent. of cures and no mortality, and not by picking his cases or applying the operation where conservatism might have succeeded. In many cases sepsis was so profound that intravenous infusion was necessary before he could operate. He furnishes a tabulated statement of 183 cases thus operated on and almost all cured.

2. **Digitalis.**—Porter's article ends with the following: 1. The composition of digitalis is, chemically speaking, very complex, and some of its active principles antagonize others. 2. The different preparations differ widely in their composition and action. 3. Its cumulative action is due to its contracting the arterioles, thus shutting off nutrition. 4. It is both a useful and dangerous remedy; and one that has a very limited range of usefulness. 5. It is only of use in lesions of the mitral valve, and even then only for a short time. 6. It should only be used when there is low arterial tension and marked venous engorgements, and as soon as these conditions are overcome its action should be suspended. 7. As a diuretic it is only of value when there is low arterial tension, venous engorgement and obstruction to the exit of blood from the kidney. 8. Acting upon the normal, and in all diseased conditions in which there is obstruction to the exit of blood from the kidney, it decreases the excretory activity of the renal glands, and impairs their nutritive activity. 9. If pushed to its fullest extent it may completely arrest the functional activity of the renal glands.

3. **Hydrochloric Acid Therapy.**—Hemmeter believes that hydrochloric acid may be usefully employed in supplementing the digestive work of the stomach and bringing about normal conditions for duodenal digestion. Whenever it is indicated he would give 20 drops of diluted U. S. P. HCl in two ounces of water every fifteen to twenty minutes, beginning fifteen minutes before the meal, taking 20 drops during eating and 20 drops one-half hour after. The medicine should always be taken through a glass tube and the mouth rinsed with a weak solution of sodium carbonate afterward. Strong gelatin capsules, as suggested by Dr. C. D. Aaron of Detroit, would be good. For improving the appetite it is best given in small doses, 10 to 20 drops in three ounces of water on an empty stomach before meals. He has some doubt as to its disinfectant and antiseptic effect, as it can not be given in sufficient quantity when given with meals. Decided fermentation in the stomach is best met by lavage with HCl in the form of a 6 to 1000 solution. HCl is contraindicated when the normal gastric secretion is aug-

mented, and there are cases where there is a special hyperesthesia, not dependent on hyperchylia. The amount required for the gastric digestion of albumin is enormous, as he says here, and it is not possible that the glandular layer can secrete the requisite amount when the transit of food into the duodenum is obstructed. When gastric secretion shows absence of free HCl and it is not due to atrophy of the mucosa, one of the best methods of restoring the secretion is by lavage with a solution of HCl, three to four parts to 1000 of warm water. The diet should consist largely of foods requiring a considerable amount of HCl for digestion as these are effective stimulants for the gastric secretion.

4. **Hyperplastic Colitis.**—The case reported is of interest on account of final recovery after extensive operations including extirpation of the entire colon, the upper portion of the sigmoid flexure and four inches of the ileum.

5. **Intestinal Antiseptics with Antiseptic Pads in Obstetrics.**—Garrison concludes his paper as follows: In all obstetric cases having a normal contracted uterus with a patulous os which does not rest against any part of the vaginal wall that pure blood may constantly flow over the endometrium and vagina, cleansing them from all bacteria, bathe the vulva with antiseptics and keep it covered with an aseptic pad. Have a *prima via* free from obstructions and constantly cleansed with antiseptics. If this regime is carefully carried out 99 per cent. of the patients will make an uninterrupted recovery, and vaginal and uterine douches should be omitted until near the close of the puerperium when they will be agreeable to the patient.

6. **Gastroptosis.**—A common mistake as regards gastroptosis, according to McPhedran, is that it is considered infrequent, and another error is in the assumption that when it exists it must give rise to grave disturbances. He reports cases and sums up his conclusions as follow: 1. Gastroptosis frequently exists without giving rise to any discomfort. So long as the functions of the stomach are performed efficiently no symptoms will arise from its abnormal position. 2. The symptoms of gastroptosis are due to the protracted retention and decomposition of food in the stomach with the local irritation and constitutional poisoning resulting therefrom. 3. In the condition known as Glénard's disease the gastroptosis or splanchnoptosis plays only a part, often a minor one, in the production of the symptom-group. In not a few instances the splanchnoptosis is rather the result than the cause of the condition.

8. **Tenontitis and Tenontothecitis Prolifera Calcarea.**—The case reported by Beck was at first sight like an osteosarcoma of the hand. The Roentgen rays, however, revealed the true condition. The third metacarpo-pharyngeal joint was the seat of the focus of inflammation; the first phalanx was grown together with the metacarpus in a laterally dislocated position; the cortex of the condylar side was totally destroyed. The tumor was well outlined in the skiagraph, showing calcareous areas. The condition is described by the author as a much degenerated (cheesy) tissue in the state of necrosis which seemed to have a sort of magnetic effect on dissolved calcareous salts, causing them to amalgamate. The condition was analogous to those found in tuberculous foci of the lungs and not infrequently in endocarditis and pericarditis, in old pleuritic bands, etc. The tendons and sheaths appear to be seldom the seat of predilection for calcareous deposits, as in this case, and he suggests for this heretofore unknown condition the names "tenontitis" and "tenontothecitis prolifera calcarea."

9. **Nasal Deformity.**—Booth describes and illustrates a case of deviation of the septum with undeveloped nasal bones, producing saddle-back deformity, and to some extent involvement also of the ethmoidal and sphenoidal bones. While he was not anxious to operate, he first corrected the septal deviation and later, after this had been held in the proper position, he made a longitudinal incision along the dorsum of the nose loosening the nasal bones and elevating them, holding them in their proper position by gauze packing, and relieved the pinched-like appearance by means of a curved needle armed with a piece of antiseptic catgut which was made to take a circuitous course in the following manner: The needle was inserted into the deep tissue at a point corresponding with the lower border of the compressor muscle on the left side of the nose; it was directed upward and made its exit about three quarters of an inch above its entrance. It was then passed over the dorsum and made to enter the deep tissue of the right side at a point corresponding with the point of exit on the left side, passing downward in a shirring-like manner, emanating at a point opposite the point of entrance of the left side. The ends were now tied carefully, pulling the soft tissue up so as to fill in the depressions. This being done, the skin was brought into place and held there by a subcutaneous suture, silkworm gut being used; the nose was dusted over with aristol and dressed, the patient placed in bed and kept there twenty-four hours, at the end of which time she was allowed to get up, and the wound was dressed. The results were favorable, as shown by the illustrations. He remarks that he thinks the combined use of cocain and adrenal capsule as a local anesthetic hemostatic in correcting septal deviation is preferable to general anesthesia, since there is less danger from heart failure or respiratory troubles and there is an absolute lack of hemorrhage.

10. **Hospital Positions.**—MacMurchy gives a list of the hospital positions open to women in Great Britain and in this country, and also elsewhere so far as they could be obtained. The total number is 559, government, municipal and hospital, and 11 positions have been recently opened to competition.

11. **Infection Predisposition.**—Gaertner has investigated and performed experiments to determine the relation of predisposition to infection observed in some cases, especially in anemia. He finds, by taking the results of all of his experiments, that anemia consequent on bleeding or starving produces a quicker and greater lack of resistance to infection than in the normal animals, and concludes that the conditions which favor this predisposition to infectious diseases have to be looked for in the hydremia of anemia.

12. **Pneumonia in Children.**—In infantile pneumonia Fischer would give, at the beginning of the fever, 1 drop doses of tincture of aconite every hour, with or without spiritus Mindereri in one-half teaspoonful doses until diaphoresis is produced, also calomel until the liquid green stool is produced, which is important as stimulating the bowel and kidney action in view of the possible complication of nephritis. Water should be given *ad lib.*, as it is valuable in carrying off toxic products and stimulating the urine and diaphoresis. An occasional dose of castor-oil or calomel is advisable to clear out the swallowed sputum from the intestinal tract. This eliminative plan of treatment should be carried on through the whole course of the disease. Antipyretics of the coal-tar series are all cardiac depressants and therefore should be accompanied with stimulants. He has made it a rule not to give them at all, but rely altogether on hydriatics and if the temperature gives rise to nervous symptoms, a tub-bath is advantageous, beginning with 90 F. and gradually cooling to 70, but not prolonged usually more than five minutes. Vigorous rubbing while in the bath will stimulate the circulation and prevent collapse. In very young and delicate infants it is advisable to give a few drops of Hoffman's anodyne just before the bath. Mustard baths are also useful as a circulatory stimulant and diaphoretic. German mustard should be employed. It is best used by sewing about one ounce in a small bag of cheese-cloth, immersing this a few minutes before placing the child in the bath, adding enough water to make a full bath covering up to the knees. The duration should be about two minutes and marked local hyperemia be produced. Intense dyspnea is best relieved by dry cups over the thorax, three on each side, above and behind, to be repeated in a few hours if relief has been afforded thereby. Oxygen can be best obtained by ventilation, excluding all needless persons, opening the windows, but screening from drafts and enforcing absolute quiet. Codein should be given only to produce sleep when natural methods fail, and then in about 1/10 gr. doses, repeated in an hour or two if no effect is produced for a child 1 year old; younger and older children in proportion. In a toxemic condition we should stimulate by good Tokay wine or whisky

diluted, and lastly the sheet-anchor of the treatment should be nutrition: to feed our patients milk, good soups, egg albumin, etc.

13. **Anesthesia-Paralysis.**—The paralysis which is observed after operations and credited to the anesthetic or conditions during anesthesia is noticed and a case, which Brickner claims to be the fifth in the literature, reported. While none of the views as to the causation of the condition seem entirely satisfactory to him, the traumatic element is evident, and he deduces the following conclusions: 1. The care of the arms is as important a part of the anesthetist's duty as is the administration of the narcotic. They should never be allowed to hang over the edge of the table. This position threatens the musculo-spiral nerves by pressure, and the entire plexus by stretching. 2. Rotation and superextension of the head should be exercised only while emergency requires it. 3. Prolonged pressure of any kind should be avoided, be it that of an assistant's hand or body, or that of a harness. When used, the shoulder strap of a leg-holder should pass over the tip of the shoulder, or over a large pad of cotton wool on the neck; or, best of all, should be held by an assistant—the anesthetist can usually spare a hand to pull the strap up from the body from time to time. It should be remembered that this apparatus has occasionally caused paralysis in a leg, as in one of Garrigues's cases. 4. The common practice of drawing the arms alongside the head, however, much it may contribute to the convenience of the anesthetist and the comfort of the operator is a bad one, and should not be tolerated. Remembering that in some of the cases reported (25) the arms were lying alongside the body during the operation, the safest rule to follow is to avoid allowing either arm to remain for more than a few minutes in any one position, however innocent that position may appear to be.

15. **Tracheotomy.**—Seven cases with 4 laryngotomies and 10 tracheotomies without a death are reported by Rogers. In the majority the operation was done under difficulties and in great haste. He specially dwells on this point as showing that the fear of the operation is comparatively groundless. The greatest difficulty was from struggling, in most of his cases, and in most the cricoid cartilage was divided. This, if a canula is worn, leads to bad cicatricial contraction, but he thinks this can be overcome by dilatation with urethral sounds until specially made intubation tubes can be put in. Cocain should always be used when controllable, but children or patients who can not be kept quiet require chloroform and he has used it with no bad effects. Laryngotomy, except for tumor, is absolutely useless, but the high operation has some distinct elements of safety. Low tracheotomy has only the doubtful advantage of a less probability of subsequent stricture above a long-retained canula, but there is some danger of wounding veins, and hemorrhage. If a large vein were injured death from asphyxia might occur before it could be secured. The lower the fistula the more difficult it is to pass the intubation tube by it and to keep the lower end of the instrument from slipping out and catching the wound. This is the objection to the low operation, leaving the stenosis to be overcome afterward by intubation. In general, and especially for emergencies, and chronic stenosis to be subsequently treated by intubation, the high operation is best. Granulations are often heard of as serious dangers in cases of long retained canulæ, but Rogers thinks this complication can not be common as it was not met with in any of his cases.

Tobacco and Glycosuria.—Stern finds that the habitual and excessive use of tobacco increases the existing glycosuria, and is occasionally though less frequently a cause of the condition. It may influence the pre-established pathologic output of urinary glucose in the following ways: 1. By protracting the duration of transitory glycosuria, and by imparting to alimentary melliturıa a certain degree of chronicity. 2. By increasing the quantity of dextrose in the twenty-four hours' urine, in the transitory as well as the chronic forms of glycosuria. 3. By transforming the lighter degrees of chronic glycosuria into the graver forms. Cases of alimentary glycosuria prolonged by the excessive use of tobacco are not at all uncommon and he has repeatedly demonstrated this by experiments on individuals. Several of these are reported. The literature is scant in this regard, but a few authors suggest the withdrawal of tobacco. Nicotin poisoning is not, he thinks, the leading cause, at least, of this effect. The main poison contained in tobacco, and one whose toxicity has not been fully appreciated, is carbonic oxid gas. It is always present, especially with cigar smoke, and habitual and excessive indulgence may produce chronic carbonic oxid intoxication. The glycosuria often follows chronic poisoning from this substance, while in the acute, non-lethal intoxication, it is always limited in degree as well as duration. CO poisoning originating from excessive cigar smoking is persistent as long as its causative factor continues.

19. **Simple Anemia.**—The history of the case reported by Floyd and Gies is one of extreme simple anemia, which showed in the beginning; H.B. 12 per cent.; R.C. 750,000; W.C. 3300. Under maximum dosage of 39 gr. of sulphate of iron, and 1/10 gr. of arsenious acid, the appetite became normal with subsidence of all symptoms, in seven weeks, the treatment being entirely suspended. The blood continued about the same while under observation for a year and a month after convalescence had been established. The case is classed as simple anemia on account of the rapidity and degree of recovery. The urine and feces were closely examined and a case of pernicious anemia is given in comparison. The similarity of the blood in the two cases was striking, the clinical features also. The authors think that the comparison demonstrates that the differentiation of primary anemia into simple and pernicious can not be made, especially in severe blood lesions merely by examination of the blood count, but that clinical features must weigh equally with it in establishing a diagnosis. To obtain a satisfactory classification of anemias it will be necessary, besides counting and studying the peripheral blood: 1, to understand the life history of the blood cells, which can be accomplished only through study of the physiology and pathology of the blood-making and blood-destroying organs; 2, to investigate more thoroughly the interrelations between the normal and diseased processes occurring in the blood and those occurring in the other body tissues; 3, carefully to correlate the results of such studies with those obtained by clinical experience.

Infantile Scurvy.—Starr attributes scurvy in infants to continued deprivation of fresh food; the quality of the freshness is an important one. He classifies the faulty foods as follows, in the order of their potency: 1. The different proprietary infant's foods administered without the addition of cow's milk. These foods are responsible for the greatest number of cases, and which variety most readily induces the disease depends chiefly on the extent of employment or the fashion at the time. 2. Proprietary foods employed with the addition of insufficient quantities of cow's milk. 3. Oat-meal or wheat gruel, barley and other farinaceæ administered with water alone or with water and insufficient cow's milk. 4. Condensed milk and water. 5. Sterilized milk; properly modified milk mixtures subjected to a temperature of 212 F. from thirty minutes to an hour or more. 6. Too dilute milk and cream mixtures; laboratory mixtures with too low albuminoid percentage. These explain the greater frequency of infantile scurvy in the well-to-do infants than in the poor. The symptoms and conditions are fully discussed and also the treatment. The essential features of the latter is the employment of a food composed of cow's milk, cream, water and milk-sugar, properly proportioned to the age of the infant and given, so far as the cream and milk are concerned, in the natural fresh state, not passed through a separator and not sterilized. Pasteurization and pre-digestion at a temperature of 115 F. are valuable in certain cases, but should never be employed when the cream and milk are properly handled at the dairy and can be kept clean and sweet and when the infant's digestion is even moderately active. The addition of fresh ripe fruit juices, orange juice especially, is useful, and when it can be taken, as is usually the case, without diarrhea. When orange juice can not be obtained scraped apple, fresh grape juice and grapes without the skins and seeds in addition to the dietetic treatment are useful. Inunctions of limbs with warm olive-oil may be a help and per-

haps some preparation of iron like ferrated elixir of cinchona. If there is great prostration, strychnia and alcoholic stimulants should be administered and all complications should be met as they arise. The article includes a tabulated statement of cases of infantile scurvy occurring in the author's practice in the last ten years.

22. **Leukemia.**—Three cases are reported by Jewett, who discusses the theories and thinks that the evidence is strong enough to make it difficult to doubt the infectious nature of at least the acute forms. In one of his three cases there was apparently a heredity, as it seems a brother and sister also died from a similar cause. He doubts the existence of anemia infantum pseudoleukemica as a distinct entity, and points out the difference in his two infantile cases from the description of this disease.

23. **Adrenalin.**—Mayer concludes from his experience with adrenalin in nasal disease that: 1. Adrenalin solutions supply every indication in rhinologic practice for which the aqueous solutions of the extract have been hitherto applied. 2. They can be used in sterile form. 3. They remain unchanged for a long time. 4. A solution of 1 to 1000 is very strong and is all sufficient for operative cases, and 1 to 5000 or 1 to 10,000 for every purpose of local medication. 5. They may be safely applied to persons of every age and of either sex. He believes that in isolation of the blood-pressure-raising principle of the suprarenal glands we have an epoch-making discovery.

25. **Diabetes Mellitus.**—From a study of the mortality statistics of New York City for eleven years, Stern finds that out of 1867 deaths from diabetes mellitus about one-half occurred in females, which is contrary to the usual ideas. It is a rare affection in infancy and early adolescence. In very early ages the most cases were males, though during the rest of early life the proportion of the sexes were about equal. As regards race the colored seem to be very free from it, while the Jews and Irish composed fully one-half of the cases. The disorder is not especially common among well-to-do. It occurs mostly among the working classes. He attributes the various glycosurias to one or more of the following causes: 1. To excessive ingestion of carbohydrates—alimentary glycosuria. 2. To diminution, or functional disturbance, or excessive or abnormal disintegration of the erythrocytes—glycosurias following the introduction of poisons and toxins, or the perverted function or removal of certain glands and organs—hematogenic glycosuria. (Pancreatic diabetes—Seegen's grave diabetes). 3. To traumatism—neurogenic glycosuria. 4. To interference with the glycogenic function of the liver to the extent that the ingested carbohydrates are not utilized normally—common or hepatogenic diabetes. 5. To a general protoplasmic deterioration and plasmolysis—diabetic deterioration. The latter part of his paper is given the description and discussion of the hematogenic glycosuria and diabetic deterioration, which he calls the most typical of diabetic diseases.

26. **Anesthesia.**—The bad effects from anesthesia are first noticed, which Richardson thinks are largely due to over-confidence and non-experience. He has never seen a death from ether itself, and he thinks that while there may have been such due indirectly to it, their number is extremely small. Only urinary suppression and pneumonia seem to him important. When a patient dies after a severe operation, even with these symptoms, it is an unwarrantable assumption that death was due to the anesthetic and not to the operation. It is absurd to say that pneumonia developing three weeks after the operation was owing to anesthesia. Only such beginning directly after recovery can be fairly said to be thus due. The subcutaneous use of cocain would be much more perilous than ether, accidents from the use of which come from disregard of danger signals and from over-etherization, not from the intrinsic dangers of the drug. General anesthesia is strongly contra-indicated under some conditions. The most important are the abdominal conditions or dangers which threaten the patient's life by regurgitation into the throat during profound anesthesia or when patients are operated on with full stomachs. Heart disease is usually regarded as a contraindication to general anesthesia, but that is not according to his experience. His chief anxieties have come from diseases of the lungs, but he is inclined to think that this anxiety is seldom justified by facts. Failure to breathe is a serious matter, and it is fortunate, and in this fact lies the great safety of ether, that a patient, with healthy lungs at least, always reacts to artificial respiration. Local anesthesia has worked well in advanced general peritonitis and dislocations, and in the few cases where he has tried it. Local anesthesia is to be preferred for all trivial operations where thoroughly applied. By such he means removal of small tumors, aspiration, amputation of fingers and toes, etc. He doubts the propriety of local anesthesia in operations like appendectomy, radical cure of hernia and major amputations. As a rule simple weakness does not contraindicate general anesthesia. It is rather the stout, flabby patient, past middle life, who has the accidents. He doubts whether in the acute febrile diseases the dangers of general anesthesia will be avoided by local or spinal cocainization. These new methods, however, have a reasonable application in some, as previous experience has shown, who bear general anesthesia badly. Another class of cases inviting disaster under general anesthesia comprises operations on the deep cervical phlegmons, tumors close to the trachea, involving or pressing on the laryngeal nerves. The imperative operations on the larynx and trachea are included, and the gravest emergencies may arise. He thinks the new method may be more serious than general anesthesia has been found to be, and doubts whether, after fifty years of use like ether or even chloroform, it will show a safety to be compared with them.

27. **Asthma.**—Bell considers the climate of Arizona altogether the best for chronic respiratory diseases, and Tucson the place above all others he would choose. It is mild, dry and comparatively windless. New Mexico also has several desirable places corresponding closely with those in Colorado, but Arizona is the most favored. He advises physicians to send patients there only in the first stage of their diseases as the second and third stage cases rarely recover.

28. **Chorea During Pregnancy.**—Newell says that true chorea is a definite complication of pregnancy, though it does not in the majority of cases depend on previous chorea of infancy, but upon special predisposition, either hereditary or acquired. The general opinion is that it is a neurosis due to stimulation of the utero-ovarian plexus. However this may be, it may be said that the organism is in a state of unequal equilibrium ready for the stimulus which causes the outbreak. This state is closely related to hysteria and it is the predisposing cause. Previous infectious diseases may prepare the ground; auto-intoxication, however, is so frequent that it is hardly necessary to call them into account. Pregnancy alone is to be considered the direct cause. Some more or less violent nervous shock is possibly the starting-point. The symptoms are described, both mental and physical. The disease usually lasts during the whole term and, while rare, is important both to the mother and the child. The drugs usually employed are sedatives, bromids, chloral, morphia, and alteratives as arsenic and iron. A case is reported. In conclusion the author remarks in regard to the frequency; out of 11,000 cases in the Lying-in Hospital, of Boston, there have been 12 cases of chorea; 11 of these were primiparæ and gave a history of previous attacks during childhood, and none of these were serious.

29. **The X-ray.**—The fact that *x*-light tubes deteriorate from use is noticed, and Rollins concludes that the most important study to be made in regard to them is to find how they may be made to keep the character of the light constant. Meanwhile the best way to excite an *x*-light tube is to use surges of millions of volts and many horse power, each surge lasting for not more than a millionth of a second.

38. **Congenital Typhoid.**—Brown reports the case of a child prematurely born while its mother was suffering from typhoid fever. The child's temperature was 101 when born and rose steadily to 103, afterward falling. The child grew weaker and weaker, and died in two weeks. On the ninth day after birth the Widal reaction was obtained complete in forty-five minutes. The autopsy showed enlarged spleen, enlarged mesenteric glands and characteristic healed ulcers in the ileum.

The case is reported on account of the rarity of congenital typhoid. The fact that miscarriage was produced by the disease of the mother, and that the child went nearly to full term in spite of the essential improper nourishment bears out the statement of the comparative mildness of the disease in the young. He has found but a few cases similar to this in the literature.

39. **Hydrophobia.**—Fisch reviews the facts in regard to hydrophobia as far as known, with a study of the Pasteur treatment, and concludes that there are many problems yet unsolved in regard to it. The germ, which is cellular since it does not pass the Chamberland filter, is yet to be discovered, and another question is how those persons can be saved in whom the period of incubation is too short to outrun the outbreak of rabies by means of the Pasteur treatment. Still another question is how are we to treat fully developed rabies?

40. **Hydrophobia.**—Morfit notes the recent advances in the Pasteur treatment, especially the fact that the cord of a fixed virus rabid rabbit can be kept in glycerin for at least three weeks, thus diminishing the expense of the technique of this treatment.

56. **Sight Tests in School Children.**—Krauskopf gives some results of Dr. Allport's sight tests in Chicago school children, and states the relation between school life and sight, briefly as follows: "The slighter eye defects are found to increase rapidly during the first three or four years of school life, and of this increase school conditions and work seem to be in some degree the cause. Following these years is a period when natural conditions of growth and development overcome all unfavorable forces both in and out of school, resulting in a rapid improvement in the eyesight; while later through high school life no material increase or decrease can be detected. The more serious cases seem also to show the effects of early school work and to continue to increase steadily throughout school life, but for this, especially when the visual acuity is exceptionally low, it does not seem just to hold the schools responsible." The special points of the examinations are discussed, quoting particularly the abnormal relationships between general development, mental and physical, and eyesight, etc. The conclusions are offered as tentative, but are given, he says, for what they may be worth as suggestions.

57. **Gonorrheal Ophthalmia.**—Four cases of this disorder are reported by Bulson, who says that, given a case of disease, verified by microscopic examination, the first thing to be done is, if the edema of the lids is marked, to divide the outer canthus and prevent pressure on the cornea. The next is thorough flushing with an antiseptic solution to keep the parts free from infective material. He insists on having a relay of nurses and thoroughly washing the infected eye every fifteen minutes night and day. In no other way can the eye be kept free from purulent discharge. The skilled nurse can manage this without thoroughly arousing the patient if he is asleep. Special caution is given not to touch the cornea with anything for fear of producing an abrasion and introducing infection. If panophthalmitis has set in, evisceration is always preferred to enucleation, owing to the danger of meningitis, and he thinks the latter unjustified except in very rare cases.

58. **Non-comitant Ribbon-like Keratitis.**—From a study of the cases reported Weymann infers: "1. That ribbon-like keratitis arises from trophic disturbances in the lymph spaces of the anterior layers of the parenchyma. 2. That, as a result, Bowman's membrane suffers and thus produces epithelial hypertrophy in the same manner as a low grade of irritation in a wound would produce unhealthy granulations. 3. That calcareous degeneration is an accidental result, but that desiccation being most easily effected in the line of palpebral fissure, the typical bands would naturally appear there first."

67. **Typhoid Fever in Children.**—The records of 61 cases of typhoid fever in children form the basis of Stowell's article. Most of the cases were sporadic and the etiology not often clear; 24 of these occurred in 10 families, and he thinks carelessness may have caused the spread of the disease. The youngest patient was 9 months old; the majority occurred in older children. Of the dispensary cases, 17 were females, 28 males. The temperature frequently varied from the typical, and several curves are shown. Convulsions were not frequent, nor was delirium a constant symptom. Apathy and mental dulness are common even in the very young. Headache is often present and epistaxis very common, usually during the first week. Twice he has seen the eruption almost universal; it usually appeared about the eighth day, about the time the temperature reached its height. Compressibility and non-resistance of the pulse are diagnostic. Both leucocytes and erythrocytes are diminished in the blood, unless pneumonia occurs, when there may be a decided increase. The hemoglobin is greatly reduced, but the anemia is frequently of a type from which recovery is rapid. In 95 per cent. of the cases the Widal reaction was positive; its only disadvantage is its late occurrence. Of the usual digestive symptoms, tympany is less constant in children than in adults. In two cases there was intestinal hemorrhage. At the beginning children are apt to be constipated; later there may be a slight diarrhea. The spleen is apt to be enlarged, though he can not give the percentage. The kidneys, like other organs, are disturbed; he finds the diazo reaction a helpful diagnostic test; the urine is usually not much concentrated. The complications observed were relapses in 3 cases, scorbutus, parotitis, varicella, and pneumonia. The average duration was twenty-three and a half days, though it extended to forty-one days without complications in one case. There were no fatal cases in the 61 children. The treatment should be such as husbands strength and favors speedy convalescence. Diluted milk to avoid coagulation, broths, custards, gelatin preparations and eggs were given. The medicinal treatment was largely directed to intestinal antisepsis with attention to the stimulation of the heart. Alcohol was used only as a dietetic in convalescence. With the coal-tar antipyretics the effect on the circulation had to be carefully watched, but he would not hesitate to give them in certain suitable cases. He relies more on sponging than baths; there is less trouble from fright or danger of collapse in the weak. For antiseptics he uses mercuric bichlorid 1 to 1000 for washing the hands, thermometer, etc., and if permanganate of potash is used it lessens the risk of mistaking the solution; for the excreta, chlorid of lime, a stock solution of 8 ounces to a gallon of water. Of this solution 1 ounce added to a gallon of water is used for disinfecting stools or soiled linen. There is no routine medicinal treatment. Whether the food is liquid or solid is of less importance than that it is properly assimilated. Heart stimulants should be reserved until actually needed, and we should guide the disease we can not stop.

72.—See abstract in THE JOURNAL of January 12, p. 127.

84.—See THE JOURNAL report of meeting of Chicago Academy of Medicine, pp. 1270-1272.

85. **Intestinal Suture.**—The various methods of suturing the intestine are reviewed at length by Connell, who refers to a method of enterorrhaphy devised by him and published in the *Philadelphia Medical Journal* in 1899, which is illustrated again in the present article. Its special advantage is that all the knots are left inside the lumen of the intestine and are therefore more easily disposed of. The method is in some respects similar to the Maunsell method, but does away with the necessity of a second excision and invagination. This circular enterrorrhaphy with all the knots in the lumen has been performed in eleven instances, by Franklin H. Martin, Wyllys Andrews, A. H. Ferguson, W. E. Schroeder, Emil Ries and himself. In three cases recovery did not take place, but in none of these could death be attributed to the method of suture. See THE JOURNAL, XXXV, p. 1150.

87. **Ureine.**—Haines and Woods criticize Moor's alleged discovery of ureine and, from numerous tests, conclude that it is simply a strong aqueous solution of recognized urinary solids and of chemicals used on the urine. While Moor's article shows evidence of its errors to the skilled chemist, they are not so apparent to the rank and file of the profession, and therefore this criticism is offered.

98. **Early Removal of Benign Tumors.**—The early removal of benign tumors is advocated by Clark to lessen the danger of their becoming malignant, to avoid damaging im-

portant structures by pressure and on account of the less risk of operation at an early stage of their growth, and the avoidance of unsightly scars from their removal. Each of these points is discussed in detail.

109.—See abstract in THE JOURNAL of April 13, p. 1060.

110.—Ibid., p. 1061.

119. **Epidermolysis Bullosa Hereditaria.**—The first case so far as known, in the negro race, of this rare condition, is reported by Smith, who gives a summary of the literature. The blood examination in this case was made by Brown, who found a general and local eosinophilia, which he thinks is in accordance with the pemphigus nature of the disease. The blood count in this case closely corresponds with that of the case reported by Columbini, the only other one in which the blood count is given.

120. **Koplik's Spots.**—These spots, according to Zahorsky, are a furfuraceous desquamation of the mucous membrane, and entirely analogous to the desquamation of the integument. So far as observation has extended this is present in measles alone, but it is not uniformly found in this disease. Occasionally the spots are entirely absent in mild cases. Their presence is exceedingly fleeting in many cases and they may be removed by the process of chewing of food. They also may fail to be detected on account of imperfect light. In the cases in his clinic, where they are not found, careful examination is made. If the post-cervical glands are enlarged and the prodromal fever has been very short and there is no trace of the Koplik spots, the disease is diagnosed rubella. If, however, prodromal fever lasts longer and the glands are only slightly enlarged the disease is assumed to be measles, even if the spots are absent. Often in place of the bluish-white spots very minute purple and dark red spots may be seen. These show the places where the scales have been removed. There is no question as to the value of Koplik's spots when present, but their absence does not exclude measles. The earliest sign of measles is a typical rash on the mucous membrane. Sometimes it may be readily recognized, particularly on the palpebral conjunctiva.

121. **Mycosis Tonsillaris.**—Hardcastle considers this disease rare and of interest because of the possibility of its being confused with follicular tonsillitis, though this does not occur with any one who has ever seen a case. The distinguishing points are the small milk-white spots elevated above the mucous membrane instead of the yellowish spots under or at the level of the mucosa in the tonsil. The lack also of constitutional symptoms of inflammatory disorders, which are not present in this disease, is of value. The eradication of the growths is difficult and can as a rule be only accomplished through curettage and the cautery, the galvanocautery being the better. The diagnosis can always be determined by microscopic examination.

127. **Puerperal Infection.**—Wadsworth holds that by careful technique uncontaminated specimens of secretion can be obtained from any portion of the uterus or vagina for examination, and diagnosis be quickly and readily made. It is only exceptionally that pathologic organisms are found in the vagina, and the apparent pathologic appearances here only suggest, with a variable degree of probability, the presence of such organisms. Bacteriologic tests only can decide. Exceptionally, pathologic bacteria may live and maintain their virulence during pregnancy and labor. After labor their conditions, growth and maintenance are more variable and the puerperal uterus is more exposed and vulnerable, and in those cases where natural resources of the vagina have failed and bacteria are persistent energetic antisepsis is required. Ordinarily the douche does not insure sterility. This can only be secured by similar methods, with obvious qualifications, to those used for the skin and hands. The douche may even reduce the natural protective resources of the vagina, enabling pathogenic organisms to establish themselves, and it may also carry other organisms. Therefore, routine douching before and after labor is irrational, ineffective, and often dangerous. The alkaline secretion of the uterus, including the cervix, is free from bacteria, though organisms have been found in the cervical canal without exciting any apparent reaction. The pregnant and puerperal uterus is also usually free, though after the first few days of the puerperium organisms are more often present. Occasionally bacteria invade the uterus from other parts of the body. The pathologic reactions of bacterial growths are the result of either a toxemia or an infection, but apparently not all toxemias of the puerperium are bacterial. It is believed that changes in the exudate, blood clots, etc., may give rise to products which when absorbed produce intoxication. Theh nature and virulence of the bacterial species may greatly influence the processes and lesions, while the contraction of the uterus may also have its influences on diseased conditions. The various forms of infection in the early stages, when proper treatment is available, can only be distinguished by bacterial examination. In toxemias not due to pathogenic organisms the results of uterine douching are immediate and effective and attended by little danger, but where pathogenic organisms exist the process may be exaggerated or disseminated. The danger of this is greatest in the first days of the puerperium when the exposed tissues and sinuses offer the least resistance. If bacteriologic examination establishes the presence of pathogenic bacteria in the uterus indications for radical operation may be more accurately determined early in the course of this process. The indications and contraindications for the various forms of curettage are practically the same as those for uterine douching. The use of antistreptococcic serum is irrational and ineffective, especially in cases where organisms other than streptococcus are often present. Practically the routine management of cases should be freed as far as possible from all procedures which interfere with the natural resources of the body, which in the vast majority of cases are sufficient protection against bacterial invasion. In a few exceptional cases requiring interference this should be determined and directed by bacterial examination.

128. **Alexander's Operation.**—The author's technique in shortening the round ligament is described in detail, his special points summarized as follows: "1. Make a clean-cut incision down to the aponeurosis of the external oblique muscle—reaching the aponeurosis rather to the inner side of the ring than directly over it, thus affording an easier recognition of your location. 2. Bear in mind the presence of the superficial fascia, and that its density varies from such a thinness as to be hardly recognized to one of such thickness as to be readily mistaken for the aponeurosis not yet reached. The fibers of the aponeurosis are in large bundles, all running in one way. Those of the superficial fascia are finer and more closely woven. 3. Expose to a clear view both pillars of the external abdominal ring when distinctly marked. If indistinct, as in small rings and in instances of dense intercolumnar fascia, expose clearly the anatomical position. With this in view the pillars and ring can be recognized by touch." In a note Brown says that he finds this operation described in Keith's work on "Operative Gynecology" (1900), with the exception of his cutting the nerve. He was not previously aware of Dr. Keith's method of operating.

131. **Ovarian Disease and Insanity.**—Hobbs' article is similar to his other published papers, attributing remarkable results to operations on the female genitals in the various forms of insanity.

132. **Cerebral Injuries During Birth.**—The extensive infantile mortality is attributed by Morse to compression of the skull or its contents during birth. This pressure may be from uterine contractions, either short in time or severe in character and of less severe character and more prolonged or by compression by instruments. He thinks that a child after delivery by forceps through a contracted pelvis has very little chance of life and if living is practically sure of being feeble-minded or idiotic. Our strongest hope in such cases at the present time lies in symphyseotomy. He hopes in the future that the induction of premature labor in such cases will obviate the necessity of all destructive operations on the child and all cutting operations in the mother.

134.—See abstracts in THE JOURNAL of February 16, pp. 462 and 463.

135.—Ibid., p. 462.

145. **Peritonitis.**—The principle of treatment of peritonitis advocated by Robinson is to give physiologic rest to the intestinal tract. This is done by allowing no food or fluid to pass the mouth, keeping the patient absolutely still in bed, not even getting up for defecation or urination, giving 1/16 gr. of morphin sulphate at intervals of two to hour hours, applying cold to the abdomen by rubber tube coil, or continued heat by means of corn meal poultices. For the thirst he would give rectal injections, and allow the patient to apply wet gauze to the lips. No ice should be allowed. All nourishment should be given *per rectum*. Cathartics should be avoided. By this method he prevents the spread of infectious material by peristalsis; the peritoneal exudate surrounds the germ, and sterilizes and plugs the visceral perforation. If food has been in the stomach it would be wise to wash it out. This method of treatment bridges the patient over dangerous periods to a quiet condition when operation is practically safe.

147. **Mesenteric Anomalies.**—After reporting a case of ileus with postmortem, Pleth accounts for the conditions by an anomalous growth of the mesentery due to the inner arm of the umbilical loop crossing the upper arm behind the same and then proceeding with its growth. The cecum and appendix therefore had to go through the mesentery, which, arising from the secondary lumbar vertebræ spreads downward toward the cecum, colon and small intestines. The root of the mesentery in this case was very short and this explained how a volvulus could be produced, the mesenterium commune thus formed permitting of free mobility and allowing the intestines to be twisted around it.

148. See abstract in THE JOURNAL, XXXV, p. 1500.

150. **Mammary Carcinoma.**—Assuming that carcinoma is primarily a local disease, extending by infiltration, by lymphatic extension and by metastasis, the only treatment which offers the patient any hope is removal of the growth, which should be early and complete. Bell's deductions are therefore that a sufficiently early operation will effect a cure in the best sense of the term and that in certain more advanced cases operation removing all the axillary structures, including the blood-vessels and the brachial plexus, from the level of the first rib outward, would effect a cure in many cases in which after any lesser operation, early recurrence, and hopeless miserable and distressing invalidism for a short time is all that remains for the patient. No breast tumor should be looked upon lightly, if there is the least possibility of its being a carcinoma or sarcoma, and the upper extremity should be sacrificed if it offers any hope of saving the life. He has always found, however, that patients dread the danger and manipulation and has not succeeded in carrying out this extreme operation thus far. He thinks that with the better surgical education of the public there will be less trouble in this respect, and some lives may be saved that are now lost.

FOREIGN.

The Lancet, April 20.

Carcinomatous Stricture of the Duodenum. H. D. ROLLESTON.—The author first describes a case in which a carcinoma with columnar cells existed in the third section of the duodenum, where the mesentery crosses over it, producing stricture and carried the patient off. The diagnosis was at no time sufficiently positive to justify a laparotomy in a man so gravely ill. Rolleston describes the different forms of carcinoma of the duodenum according to the location: Carcinoma in the first part of the duodenum is rare. In the 40 collected cases it was affected alone in 8 and only with the second part in 5 more. It is exceptional that carcinoma of the pylorus extends in this direction. He says, however, practically the same clinical picture is seen in carcinoma of the pyloric end of the stomach. The commoner disease will generally be the one diagnosed. It is therefore called juxta-pyloric carcinoma of the duodenum, or another name is supra-ampullary carcinoma. It may develop on a former ulcer, as in the stomach, though since ulcer of the duodenum is usually situated in the first part, where carcinoma is rare, this can hardly be considered an important factor. The most frequent form of primary duodenal carcinoma is that in the second part of the duodenum. Of the 40 collected cases the growth was limited to the second part in 24, while in 5 others the first part was also invaded. If it occurs in the upper part of the second portion, above the liver or biliary papilla, it will give rise to much such symptoms as pyloric carcinoma, but if it involves the papilla, the flow of bile will be interfered with and jaundice or other complications arise, and if it is well below the biliary papilla it will give rise to obstruction with biliary vomiting. It has a special tendency to arise in the mucous membrane coverng the papilla, but this must be differentiated from carcinoma arising inside the papilla or in the ampulla of Vater. This preference of site is possibly due to some fetal displacement or intrusion of the epithelial cells during the development of the parts. An innocent papilloma is sometimes seen in this situation, and the author thinks that carcinoma may subsequently develop from such a growth. He thinks the possibility of impacted gall-stones having any causative effect seems improbable, though Dickinson has recorded the association of the two conditions. Carcinoma of the third part of the duodenum is the least frequent of all; in the 40 collected cases, not including the present one, it was only found in 3. The symptoms are those of intermittent obstruction, as in the case here reported. It thus resembles pyloric obstruction except for the presence of bile and pancreatic juice in the vomit, and their occurrence should at once suggest carcinoma, or gastric biliary fistula. The vomit should be tested for trypsin by seeing whether fibrin is digested in alkaline solution. In this way the diagnosis between the two conditions may be made.

When to Operate in Perforative Peritonitis. ARTHUR C. ROPER.—The four cardinal signs on which Roper depends for the diagnosis of perforative peritonitis are, for the first few hours after its occurrence: 1. Rigidity. 2. Tenderness. 3. The presence of fluid. 4. Free gas in the peritoneum. To these should be added pain and signs of collapse. If first seen several hours after the occurrence, there may be rigidity giving place to distension and immobility in respiration. Tenderness may be still present, though not so general. Free fluid is probably increased and neither feces nor wind have passed per rectum. This remarkable amelioration of symptoms may deceive even skilful men. The thing to do in the stage first described is to make the diagnosis, give anodynes and prepare for the operation. The diagnosis may be somewhat difficult. There is usually a history, but the appendix is usually the offending organ and we have here, as a rule, a particular tenderness at McBurney's point. In the second stage careful attention to the condition of the abdomen alone can save one from mistakes. Taking the temperature is of great importance because the absorption of pus or its toxins causes a well-marked rise. What we want to know is whether the appendix is perforated in a situation where adhesions will form and cause only local trouble, or whether there will be a general septic peritonitis. We also wish to know if the appendix is in its usual position since in rare cases it runs inward toward the middle line of the abdomen and over the peritoneum. The things to be looked for are: 1. The condition of the patient, the pulse, temperature and aspects. 2. The condition of the abdomen. 3. The presence or absence of swelling. Taking the second point first we should make sure whether distension has occurred and whether the peritonitis causing it is general or local. The first we can see at a glance, and percussion showing actual dulness on both sides would indicate that peritonitis is more than a local one and that fluids are accumulating in the general cavity. Ordinarily, however, dulness is first on one side. We must not infer, however, that peritonitis is necessarily general because distension is general, and if we find that contractile power is left in the bowel we infer that the general abdominal condition is not very bad. The presence of definite tumor without distinctive signs of pus in it is a relief. The pulse and temperature must be closely watched. In sthenic cases where the patient's face is flushed, he is alert and has no delirium, we can afford to wait, especially if we can feel a distinct swelling and the distension is not alarming, but it is just as well to be prepared and know just what we are awaiting. If, watching such a case, the temperature suddenly falls without improvement in the pulse, imme-

diate operation should be decided on, as it means sloughing of the appendix at least and may mean something worse. The asthenic cases are more serious, not those which are moribund where nothing can be done, but where there is profound disturbance, pale or sallow complexion, and rapid, small, compressible pulse and only a small rise in temperature and any evidences of septic poisoning, we should arrange for immediate operation, but Roper specially suggests that he does not operate during shock, as he does not wish to add the shock of operation to that already existing. He would prefer to rally the patient with opiates and stimulants. As regards opiates, he prefers opium to morphin, which he thinks is more of a bowel paralyzer. If possible, he makes the diagnosis before giving opiates. If that can not be done he gives opiates and sees the patient again in four to six hours. In a case of gastric perforation four hours is too long to wait. While making sure of the seat of trouble one would be doing right in insisting that no opiates be given except in the physician's presence until he has arrived at the diagnosis.

Causation and Treatment of Profuse Epistaxis in People Beyond Middle Age. GEORGE COATES.—Five cases of profuse epistaxis in elderly people are described by Coates, who discusses the causes. In all these cases the sequence of events which led up to epistaxis was generally alike: 1. Long continued high arterial pressure. 2. Some sudden cardiac failure, such as the giving way of the valves or loss of power of the cardiac wall. 3. Over-filling of the whole venous system, the weakened heart not being able to sufficiently empty engorged veins against the high arterial pressure due to contracted arterioles. 4. Leakage of the over-filled veins. He says the proper method of treatment of these cases is to empty the over-filled veins. If we can relax the walls of the arteries and help the enfeebled heart this should be done, but this is impossible by giving heart tonics at first. Nitroglycerin is quite effective: nitrite of amyl might be more so. He says: "Finally, by recognizing profuse epistaxis as a symptom of a sudden though mostly temporary heart-failure, there is no danger of commencing valvular disease being overlooked and the patient being considered as one who only requires a little surgical treatment. In some cases it is possible that the alteration in the circulation causing the epistaxis may also cause cerebral symptoms, but here, again, the cerebral symptoms are mostly not the cause or the result of the epistaxis but only the result of the circulatory conditions leading to the epistaxis."

Journal of Laryngology, Rhinology and Otology, March.

Atresia Auris Congenita. HUNTER TOD.—Three cases are reported and illustrated; two in which there was bilateral deformity and the third unilateral with very slight auricular deformity. This generally accompanies these cases and is attributable to arrest of development. Congenital aural fistula is rare, only four cases being found; it is much more frequent in normal ears, and auricular appendages are almost as rare. The hearing power is rarely entirely destroyed; complete deafness is exceptional. In some cases the hearing power is found to be increased if the mouth is kept open. He speaks decidedly against the value of operation and sums up his conclusions briefly as follows: "1. The deformity is not hereditary, and the cause is not known. 2. It occurs rather more often in females, and is more often unilateral than bilateral. 3. One may get accompanying deformities, chiefly due to maldevelopment of the parts in connection with the first and second branchial arches. 4. The labyrinth is rarely affected. The hearing varies, but is present to some extent, though slight. Hearing-tests give practically the same results as those in an uncomplicated middle-ear affection, but more marked. 5. Embryological, pathological, and clinical observations prove operation to be useless. 6. Something more, perhaps, can be done by careful non-operative treatment and by early and assiduous instruction in speaking and lip-reading.

Bulletin de l'Academie de Medecine (Paris), April 2.

Four Cases of Cured Glioma of the Retina. LAGRANGE.—The first patient was a boy of 2½, and the tumor on removal proved to be a neuro-epithelioma. The papilla was completely included in the process, but the lamina cribrosa formed a barrier behind, beyond which it did not pass. The cure has persisted seventeen months to date. In the second case there has been no recurrence during the 2½ years that have elapsed since the ten-months' babe was operated on. The optic nerve was not involved. The retina was completely detached from the choroid coat and the gliomatous masses had proliferated on the external surface of the retina. The choroid and iris were intact. The glioma seemed to have developed from the outer granular layer while the inner layer was normal. The third case was in retrogression when first seen, cured by enucleation in January, 1900. The choroid was not involved in the tumor, which proved to be a glioma, the generic term applied to all embryonal neoplasms of the retina, although in this case the tumor was closely allied to an epithelioma or angiosarcoma, retrogressing into a fasciculated fibroma. The child was 6 years old, which confirms the assumption that glioma of the retina is less malignant the older the child. The fourth case was a traumatic endophytic glioma in a girl of 9. The entire retina was involved in the process and the posterior portion of the vitreous contained fibrils infiltrated with altered retinal cells. The tumor developed from the inner granular layer. The child has been cured for more than a year.

Prophylaxis of Tuberculosis. LANCEREAUX.—Reviewing 2192 cases of tuberculosis in his service Lancereaux finds that alcoholism was evident in 1229, and he also notes that 853 out of 1984 chronic drinkers were tuberculous. He mentions that the tubercular localization was in the right apex in the great majority of cases, and that the lobular or caseous form predominated over the granular. In his entire experience he was able to find only 46 cases in which contagion was manifestly the cause of the tuberculosis, and only 93 in which hereditary influences seemed to be a factor. Next to alcoholism, an insufficient supply of air is the most potent factor in the evolution of tuberculosis, and Lancereaux concluded his address urging legislation to prevent overcrowding, by more stringent building regulations.

April 9.

Mineral Composition of the Human Fetus. HUGOUNENQ.—During the first six month of pregnancy mineral elements enter very little into the composition of the fetus. In the last three months, however, such an amount of mineral substances is taken up that at birth the fetus takes away from the maternal organism as much as 100 gm. of mineral elements. This includes .268 gm. to .294 gm. of metallic iron, of which probably 50 to 60 per cent. is in the form of hemoglobin. Most of the balance is stored in some organ, as has been determined on other mammals, probably to compensate for the insufficiency of iron in the maternal milk. With the exception of the mineral elements required for the blood and bones, the other mineral constituents are practically in the same proportion at all stages of fetal life. The research on which these assertions are based included incineration of the cadavers of eight fetuses or new-born infants.

Bulletin de la Soc. d'Electrotherapie (Paris), March.

Tardy X-Ray Burns. OUDIN.—This writer has had occasion to observe three cases in which, five or six months after exposure to the *x*-rays, evidences of injury became manifest. The lesions presented the same appearance and also the slow evolution of the severe burns that have been noted, commencing on an average two weeks after the exposure. In one of the patients there was slight immediate pigmentation, but the burn developed on the opposite side of the abdomen, under the influence of a trifling traumatism—an injection of serum. In the third case, six months had elapsed after exposure, with no evidences of a lesion, when under the influence of a local hot douche—not hot enough to burn—the vast, characteristic ulceration commenced and progressed. These facts have convinced Oudin that the *x*-ray burn is a secondary trophoneurosis, analogous to mal perforans or decubitus acutus and the cutaneous affections described by Charcot as hysteric ulcerations. An ulceration on the mamma, which appeared in a young hysteric in consequence of a violent emotion, and persisted for months rebellious to all treatment, resembled in every respect the tardy *x*-ray burn on the mamma of Oudin's first patient.

In some of the *x*-ray burns he has examined, the patients had noted pains along the nerve supplying the region. The lesions in some cases followed the nerve, instead of being limited to the parts exposed.

Presse Medicale (Paris), April 13.

Typhoid Pyonephrosis.—GARNIER AND LARDENNOIS.—Only three cases of actual pyonephrosis of typhoid origin have been observed in France. Garnier reports a fourth case. Pains in the left hypochondrium were a noticeable feature of a moderate case of typhoid fever, in a man 31 years of age. They persisted after defervescence and were occasionally accompanied by an intense, transient, febrile paroxysm. A month later the pains became more severe and they sometimes radiated from the lumbar region to the testicle, simulating nephritic colic, the attacks terminating with the expulsion of a few thick clots of pus containing the typhoid bacillus. Pus was still evident in the urine after an extensive nephrotomy, and the pains and continuous remittent fever persisted with occasional febrile exacerbations. The kidney was removed and found large, nodular and dotted with abscesses. The patient died in progressive cachexia and the other kidney was found in much the same condition. The pyonephrosis induced by typhoid bacilli may affect the entire kidney or may be limited, but it can scarcely be differentiated until convalescence commences. Pains in the lumbar region, tumefaction of the kidney and intermittent pyuria are the principal symptoms, although the latter may be absent. Nephrotomy should be done early and the organ extensively opened. This operation may prove sufficient if all the pockets can be evacuated. It answers the need of the moment and allows the functions of the other kidney to be tested. If the affection progresses and the other organ is intact, an early secondary nephrectomy is urgent.

Revue de Chirurgie (Paris), April.

Physiologic and Cytologic Study of Hemothorax. T. TUFFIER AND G. MILAN.—The increase in the size of the effusion which becomes evident toward the fifteenth day, is not due to the continuation of the hemorrhage but to a serous exudate. It is not, therefore, an indication for operation. Neither is the fever an indication for surgical intervention when it is moderate, as it is not of microbian origin but purely dynamic and due to absorption. Persistence of polynuclear cells in the effusion after the 25th day, however, is suggestive of suppuration. The latter may also be suspected in case the polynuclear cells, instead of diminishing daily, increase in numbers or remain stationary. By that time they ought to be less numerous than the lymphocytes and mononuclear cells. The correct treatment of traumatic hemothorax is capillary puncture about the fifteenth day, at the moment when the blood is sufficiently diluted and the pulmonary wound sufficiently cicatrized to prevent a new hemorrhage when the pressure is removed from the lung. One case of moderate, aseptic hemothorax from which the above deductions were made is described in detail. The corpuscles in the effusion remain alive and are reabsorbed into the circulation, the serous effusion diluting the blood and preventing coagulation.

Hydatid Cysts in the Argentine Republic. H. VEGAS AND D. J. CRANWELL.—The Argentine Republic is one of the countries in which hydatid cysts are most prevalent. The general mortality therefrom is about 11.11 per cent. Marsupialization and drainage are slow but by far the surest method of treatment. Extraction of the germinal membrane with suture without drainage is exceptionally indicated in cerebral or external cysts when extirpation is impossible on account of adhesions. The writers' experience includes 952 cases. In 27, several organs were affected at once; in 641 the liver, in 54 the lung; in 15 the brain; in one each the mediastinum, mamma and thyroid body, and in 4 the bones. Most of the cases occur in the province of Buenos Ayres.

Experimental Study of Fractures of the Upper Jaw. R. LEFORT.—The extensive and arduous experimental research reported in this article establishes the fact that severe fractures of the bones of the face are subordinate to certain very simple laws and can be classified in a certain number of well-defined types. Knowledge of these types will singularly facilitate the investigation and exact diagnosis of fractures which too frequently are overlooked, to the detriment of the patient and sometimes also of the surgeon. These types are described in detail and profusely illustrated in Le Fort's article, commenced in the February number of the *Revue*.

Primary Tuberculosis of the Parotid Gland. P. LECENE.—The case described is the ninth on record of a primary tuberculosis of the salivary glands. The symptoms usually indicated a mixed tumor; occasionally facial paralysis suggested a malignant neoplasm. In others the affection was diagnosed as tubercular adenitis. Even after the operation, the diagnosis was possible in some cases only under the microscope. Total extirpation is the only treatment whenever possible, but the facial nerve must be spared. All the parts involved must be removed and with the curette this usually can be done without injury to the facial nerve or the vessels.

Centralblatt F. Chirurgie (Leipsic), April 6.

Treatment of Irreducible Luxations of the Lower Jaw. KRAMER.—Instead of resection in cases of severe and irreducible dislocation of the lower jaw, severing the stretched muscles will sometimes bring the jaw into place without further trouble. In a case described, after dividing the masseter and external pterygoid muscles and the external lateral ligament, the luxation was corrected without trouble.

April 13.

A Magnesium Murphy Button. V. CHLUMSKY.—A small ball of perfectly pure magnesium introduced into the stomach or intestine becomes corroded in two, and disappears entirely in eight to sixteen days. An intestinal button of magnesium, on the pattern of the Murphy button, is completely dissolved in eight to ten days after a gastroenterostomy, if the patient is given a little weak solution of hydrochloric acid to hasten the process. Owing to its absorbability the button can be simplified, much to its advantage. Chlumsky states that his experiences on patients and dogs confirm the superiority of this magnesium button over the original appliance.

Muenchener Med. Wochenschrift, April 9.

Transfusion of Animal Blood in Therapeutics from a New Point of View. A. BIER.—The many severe symptoms that follow the transfusion of animal blood have caused the rejection of this measure as inevitably dangerous, but Bier has been studying these symptoms and finds that they are all characteristic of the invasion of the organism by an infectious agent. The blood-corpuscles of the heterogeneous blood evidently act like foreign bodies which the vital energies of the organism rally to repel, and thus an actual "aseptic infectious disease," as he calls it, is produced by the transfusion. It is followed by a chill, fever, sweat, possibly albuminuria and hemoglobinuria; the foreign corpuscles are agglutinated and dissolved, like bacteria, and the spleen becomes enlarged. Afterward, in the same way as during convalescence from an acute infectious disease, metabolism is stimulated and the appetite increased. The idea occurred to him that these phenomena and processes might be utilized for therapeutic purposes. The alteration in the composition of the blood might possibly confer bactericidal power on it, and the sudden, intense, transient hyperemia, the subsequent, protracted, serous saturation of the internal organs and the skin, and the augmented metabolism and appetite, could not fail to benefit certain chronic, sluggish, infectious processes by giving them a general shaking-up, as it were, and thus allowing the recuperative forces of the organism a chance to work. Experiences with certain drugs suggest the possibility that the changes induced might be most pronounced at the point of the morbid processes. Reasoning from these premises Bier applied the transfusion of difibrinated lamb's blood as a therapeutic measure in eleven cases of advanced, incurable tubercular affections. The amount injected at a time ranged from 4 to 20 c.c., never enough to cause more than a trace of albuminuria. All the patients mentioned that their faces felt as if they would burst. They were informed that they would experience transient swelling and flushing of the face, pains, chills, fever, etc., and that

these symptoms were part of the treatment. The appetite returned after a single injection and became ravenous in nearly every case. The fever did not cause lassitude; the patients felt well and enjoyed their meals even while it lasted. The lamb's blood was injected in a vein of the arm, the aperture in the needle eccentric to the point. One case is reported in detail, the patient a young carpenter with extensive open tuberculosis of the sacro-iliac symphysis on both sides. The first four injections—a total of 55 c.c. in five days—failed to cause any symptoms of intolerance for two days, then urticaria developed all over the body, lasting for three days. Ten days after the last injection 10 c.c. were transfused, the ordinary train of transfusion-symptoms developed and with them a ravenous appetite. The transfusion was repeated about 12 times in the course of four months. Patient gained in weight and the extensive, bilateral suppuration in the pelvic abscesses and fistulæ became nearly dried up, while the patient was able to be up and about without discomfort. One day 2.5 c.c. were injected followed as usual by transient dyspnea, backache and burning of the face. The same amount was injected as these symptoms subsided, followed by slight pains. Then 5 c.c. were injected and caused no disturbance, and an additional 10 c.c. induced merely slight dyspnea. A total of 20 c.c. blood was thus transfused in twenty-five minutes, and after the first portion caused no disturbances. This suggests that the dissolving substances in the patient's blood were used up by the first small amount of blood transfused. Four cases of lupus showed such prompt and remarkable retrogression of the lesions after systematic transfusion that Bier remarks he would call them cured if it were not for the disappointments that followed the alleged cures with tuberculin. He has also been testing this measure in cases of inoperable malignant neoplasms and promises some interesting communications when his observations are completed. One case of acute sepsis, and another of pyohemia, both very grave, were not influenced by the injections and succumbed to the progress of the disease. As lamb's blood is the least toxic, Bier suggests that the effect might be enhanced by using the blood of other animals.

Multiplicity of Primary Malignant Tumors. NEHRKORN.—Several cases of multiple carcinomata have been observed at the Heidelberg clinic. In one there was a carcinoma on the temple, another over the orbit and a third behind the ear. In a second patient two carcinomatous nodules a few centimeters apart developed on one temple. In a third a carcinoma had developed on the ear subsequent to chronic eczema and otitis, while an adenoma developed on the lip. Another patient was recently operated on and a carcinoma of the mamma removed at the same sitting with an adenoma of the uterus. Schiller published recently a case in which a spindle-celled sarcoma of the epiglottis coincided with an epithelioma of the tongue. The latest case observed by Nehrkorn was that of a woman of 59. A melanosarcoma of the rectum was removed and a carcinoma of the uterus at the same time. The patient died and the autopsy showed numerous sarcomatous metastases of the viscera. He concludes from his experience and that of others that multiple carcinoma-formation has been established in a few special cases. Usually it seems to be a mere coincidence.

A New Point of View for the Treatment of Whooping-Cough. G. SPIESS.—The causal agent of whooping-cough induces an irritation in the throat which causes the coughing by reflex action. If the lining of the throat could be rendered insensible, the reflex action would not be induced. The anesthetic effect of cocain is transient, but orthoform is a substance which induces a hypoesthesia sufficient for the purpose and lasting several hours. Spiess therefore treats whooping-cough by insufflating orthoform with a bulb powder pump, the patient inhaling as the powder is blown into his throat. The relief is immediate, and infants and children make no resistance to the measure as they learn that it is painless. It is also beneficial in certain other affections of the upper air-passages.

April 16.

Acute Serous Meningitis. J. HEGENER.—The number of cases of acute serous meningitis on record is still very small. The affection is differentiated by the complete recovery after evacuation of the excess of cerebrospinal fluid, although the symptoms may have indicated severe purulent meningitis. Hegener recently operated on two patients with symptoms of pressure on the brain complicating an old and severe disease of the middle ear, retarded pulse, headache, optic neuritis, etc. All the threatening symptoms vanished after opening of the subarachnoid space and the gradual oozing of a large amount of serous fluid. In one case the parts involved in the ear affection had all been removed except the diseased labyrinth in which no pus was found. It healed completely and spontaneously, after the escape of the serous fluid. In one of the cases optic neuritis appeared nine days after the incision in the subarachnoid, and subsided four weeks later. If lumbar puncture had been done instead of the subarachnoid incision and subsequent continuous drainage, it would have been necessary to have repeated it several times in one case, as the symptoms of pressure on the brain did not entirely subside until after eight days.

Tuberculosis a Toxicosis. E. KLEBS.—It has been established that market butter may contain tubercle bacilli. Klebs asserts that it may also contain the toxins of the tubercle bacilli and describes various experiments which indicate such to be the case. He considers his personal experience suggestive in this respect. He was spending the summer in a healthy Swiss village when he noticed that an ulcus cruris and eczema of the hands, from which he had suffered ten years previously, had recurred with their pristine intensity, although no external agents could have irritated them. He finally traced their origin to the unusually large quantities of butter he was eating, made up his mind that they were tubercle bacilli toxins, and cured them with his "tuberculocidin" which neutralizes these toxins. Experiments on guinea-pigs showed that the butter contained a virulent toxin which killed the animals with the characteristic lesions and hypothermia characteristic of tubercular toxins. He is convinced that tuberculosis, besides being an infectious disease, is at the same time a toxicosis.

Treatment of Rhachitis with Suprarenal Substance. M. HOENIGSBERGER.—Suprarenal extract has no influence on rhachitis except as a measure that benefits the health in general. It accomplishes the latter by raising the blood pressure by its vasoconstricting action on the vessels, and by its retarding and regulating action on the heart and pulse owing to its action on the vagus centers.

Rinsing Out the Stomach in Children. I. STEINHARDT.—The general practitioner is urged to make more frequent use of lavage of the stomach in the gastro-intestinal disorders of infancy. The technique is simple; it can do the child no harm and is indicated in all cases of acute digestive disturbances in small children rebellious to the ordinary measures. In nearly every case more or less marked improvement is the prompt result.

Treatment of Gout with Quinic Acid. SALFELD.—Quinic acid seems to possess the property of dissolving or transforming the deposits of uric acid in genuine gout so that they subside or are eliminated with no trouble to the organism. A combination of quinic acid and piperazin has been tested by Salfeld on several patients, and he is much impressed with its therapeutic value. It has no effect on articular rheumatism and is thus an excellent differentiating medium.

Treatment of Fibrinous Pneumonia. HORNUNG.—The points emphasized in this communication are the danger of alcohol in any form in pneumonia, as it has the same paralyzing effect on the vasomotor centers as ether and chloral and the pneumococcus toxin itself, while it is of the utmost importance to keep these vasomotor centers intact. Another point emphasized is the benefit to be derived from faradization of the thorax with a rolling massage-electrode. The constant interruption of the current exerts a kind of massage on the cells which materially stimulates the circulation and hence relieves the heart. The electrization is grateful to the patient and has never failed in Hornung's experience, even in the severest cases of disturbed compensation.

Wiener Klinische Rundschau, April 7.

Etiology of Delirium Tremens.—A. ELZHOLZ.—It is probable that the excessive use of alcohol generates in the body a toxic substance, analogous to the toxins of the pneumococcus or other infectious agents. Elzholz is inclined to believe that alcohol is itself the antidote for this metabolic toxic substance. If the alcohol is suspended or an insufficient amount ingested, then the toxic action has full sway and the clinical picture of delirium tremens results. He calls attention to a symptom of delirium tremens which has been hitherto overlooked. It indicates that the toxic substance generated has an influence on the eyes—possibly also on other mucous membranes. He has found a catarrhal affection of the conjunctiva accompanying delirium tremens in more than 50 per cent. of his cases since he began to look for it a few years ago. It may be very slight or may attain the proportions of a muco-purulent conjunctivitis, but in every case it vanishes with the termination of the attack of delirium tremens. No complications on the part of the eye accompanied it in any case. He cites an instance in which an incipient attack of delirium tremens was arrested by a pint of rum which the patient drank just before he was taken to the hospital. There was no delirium for two days after his admission, when it again burst forth with renewed energy. The alcohol proved an antidote for the toxin and annulled its influence, but when the effect of the alcohol passed off the delirium recurred.

Congenital Stenosis of the Pylorus in Infants. A. KOEPPEN.—This condition should be called a "cramp of the pylorus," rather than stenosis, and is a nervous phenomenon on an inherited nervous soil. The treatment should be the strictest hygienic-dietetic measures from the first indications of the trouble. Medicines do little good, as narcotics can not be given in amounts sufficient to ensure a permanent effect, and as purgatives merely serve to increase the cramp. Koeppen has never derived any benefit from lavage of the stomach, but recommends the application of dry heat to the abdomen, possibly with a thermophor or hot flannel cloths. The child is then fed, and held in an upright position until eructation occurs, which may require fifteen minutes or even longer. The food should contain very little casein, little sugar and not much fat, in order not to favor the tendency to cramp. All mixtures of cow's milk are injurious on account of the proportion of casein. When careful supervision of the food, etc., and the course of the trouble, show the impossibility of even a minimal absorption of food, then the little patient should be operated on as a last resort, without waiting for or even enquiring as to the degree of the stenosis or the extent of the hypertrophy. Gastro-enterostomy is the only operation that prevents a recurrence of the trouble as it removes the foundation for the injurious consequences of the congenital, local constitutional anomaly to which the cramp of the pylorus is due in these cases. This article was commenced in No. 9.

Alcoholism in Childhood. M. KASSOWITZ.—The writer of this communication, which was presented at the International Anti-Alcohol Congress, states that he and others have known instances of epilepsy, delirium tremens, dropsy, etc., in children follow the continued use of alcohol, not only when ingested in excessive amounts but also frequently after the moderate use of wine or beer and even after the small doses of brandy which are considered by many persons as not only harmless but directly beneficial. These experiences testify to an abnormal susceptibility on the part of the childish nervous system and organism to the effects of alcohol. The depressing influence of alcohol on the child's capacity for study has also been directly demonstrated.

April 14.

Hemorrhage After Operations on the Tonsils. SEIFERT.—In the two cases of angina phlegmonosa described, the incision was followed by violent hemorrhage, but Seifert arrested it by plugging the wound with cotton or gauze. The tampon was left over night and definitely checked the hemorrhage in one patient. In the other the flow of blood was renewed when the tampon was removed. The wound was irrigated with an antiseptic solution and the tampon replaced, with no further disturbance. Tamponing the wound is a simple and effective measure for arresting post-operative hemorrhage from the tonsils, if skillfully performed, and renders ligature of the external carotid unnecessary.

Wiener Klinische Wochenschrift, April 4.

Injections of Paraffin for Prolapse. HALBAN.—In four cases of cystocele Halban injected a half ring of paraffin between the wall of the vagina and the bladder in order to form a kind of a pessary to prevent the prolapse. He injected about 20 to 25 c.c. and inserted a pessary for twenty-four hours to make the paraffin cool in the desired shape. The results have been extremely satisfactory.

St. Petersburger Medicinische Wochenschrift, March 19.

The Growing Old of the Heart. K. DEHIO.—As the blood-vessels grow old, the changes in their structure cause corresponding functional and anatomic changes in the heart. It increases in size and weight to enable it to keep pace with its increased task, but at the same time the circulation is retarded, keeping the pulse slow. Dehio describes a simple apparatus with which he tested the power of the heart to respond to extra tasks. The foot is fastened to a weight hanging from a pulley on a post at the foot of the bed. Drawing up the leg raises this weight of 4090 gm. to a height of 40 cm. Young and healthy persons could do this fifty times a minute with no apparent effect on the heart's action, which remained rhythmical and even, although the pulse was 114 to 120 and the limb much fatigued. Less robust persons wearied in six minutes and the pulse rose to 132 or 140, but the heart's action was regular. Elderly persons, on the other hand, found it impossible to keep up the exercise more than a few minutes on account of dyspnea, palpitations or excessive sweating, but at the same time the pulse persisted slow, the beat ranging from 76 to 102, arrhythmic in several cases. The heart is incapable of accelerating its beat as occasion demands, as is possible in the young and healthy. The contractions are less frequent and there is less volume to the beat owing to the diminished automatic energy. The latter is due principally to the myofibrosis to which Dehio has previously called attention. The essence of this process is a disappearance by atrophy of the muscle fibers of an originally primarily hypertrophied heart, and the substitution of the atrophied muscle fibers by interstitial connective tissue.

Queries and Minor Notes.

"CHRISTIAN SCIENCE" UNIVERSITY.

CAVE SPRINGS, GA., April 19, 1901.

To the Editor:—Is there, or was there, eight or ten years ago, a legal medical college or medical department of a university known as the "Christian Science University of Chicago?" If there is or was such, can its graduates practice in Georgia. I. S.

ANS.—We have never heard of the institution, and we doubt very much whether its graduates could practice in Georgia under present laws. According to a recent decision of Judge Lumpkin, of Atlanta, editorially commented upon in the *Savannah Press*, no one not regularly graduated from a medical college can legally practice there.

SURGEONS ON OCEAN LINERS.

BART, ME., April 23, 1901.

To the Editor:—To whom should one apply for a position as Surgeon on an ocean liner? What is the average salary such positions offer and the general requirements for applicants?

H. B. H.

ANS.—Appointments on ocean steamers are made by the officials of the company, to whom inquiries should be addressed. The requirements are usually five years of practice or its equivalent in hospital experience. In British steamers British qualifications are necessary. Usually the salary is small, but there are often certain perquisites, head-money, etc., which will increase it perhaps to something like $100 a month.

SECRETARIES OF HEALTH BOARDS.

SAC CITY, IOWA, April 27, 1901.

To the Editor:—Please favor me with a list of the secretaries of the state boards of health of Michigan, Nevada, South Dakota, Wisconsin, New Mexico, California and Texas. L. E. M.

ANS.—Michigan: Dr. B. D. Harison, Sault Ste. Marie. Nevada:

Dr. S. L. Lee, Carson City. South Dakota: Dr. A. E. Clough, Madison. Wisconsin: Dr. H. M. Ludwig, Richland Center. New Mexico: Dr. T. P. Martin, Taos. California: Dr. C. C. Wadsworth, 1104 Van Ness Ave., San Francisco. Texas: Appointment not yet published.

OSHKOSH, WIS., April 25, 1901.

To the Editor:—Please give the names and addresses of the secretaries of the state medical boards of examining surgeons for Michigan and Indiana. A. B. C.

ANS.—For Michigan, see above. The secretary for Indiana is Dr. W. F. Curryer, Indianapolis.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., April 18 to 24, 1901, inclusive:

Charles N. Barney, contract surgeon, detailed a member of an examining board at Fort Monroe, Va., to relieve Captain F. R. Keefer, asst.-surgeon, U. S. A.

George E. Bushnell, major and surgeon, U. S. A., leave of absence granted.

Thomas C. Chalmers, major and surgeon, Vols., recently appointed, to report at San Francisco, Cal., for transportation to the Division of the Philippines.

William H. Corbusier, major and surgeon, U. S. A., member of a board in New York City, N. Y., to investigate the suitability of the transport *Terry*, for service as a hospital ship in the Philippine Islands.

William D. Crosby, major and surgeon, U. S. A., member of a board in New York City, N. Y., to investigate the suitability of the transport *Terry* for service as a hospital ship in the Philippine Islands.

Charles R. Gill, captain and asst.-surgeon, Vols., sick leave granted.

Leonard K. Graves, captain and asst.-surgeon, Vols., recently appointed, leave of absence granted.

George P. Heard, contract surgeon, from Birmingham, Ala., to post duty at Fort McPherson, Ga.

Willis J. Raynor, captain and asst.-surgeon, Vols., recently appointed, leave of absence granted.

Milton Vaughan, captain and asst.-surgeon, Vols., recently appointed, from the Department of Cuba, via San Francisco, Cal., to the Division of the Philippines.

Franklin F. Wing, contract dental surgeon, from Washington, D. C., to San Francisco, Cal., en route for service in the Division of the Philippines.

PROMOTIONS AND APPOINTMENTS, ETC., OF ARMY MEDICAL OFFICERS, REGULARS AND VOLUNTEERS.

The following promotions, retirements and deaths in the Medical Department, U. S. A., and appointments to positions as surgeons and asst.-surgeons, U. S. Vols., have been recorded in the Adjutant-General's Office, War Department, Washington, D. C., from March 15 to April 15, 1901. The appointments, etc., up to March 15, consequent on the passage of the army reorganization bill of February 2, 1901, were published in THE JOURNAL of April 6, last:

Regular Army, Promotions.—Captain W. B. Banister, asst.-surgeon, to be surgeon with the rank of major, April 2, 1901.

Regular Army, Retirements.—Colonel A. A. Woodhull, asst.-surgeon-general, April 13, 1901, by operation of law, act of June 30, 1882; Captain Jefferson D. Poindexter, asst.-surgeon, with the rank of major, April 13, 1901, for disability incident to the service.

Regular Army, Deaths.—Major William R. Hall, surgeon, April 2, 1901, at Manila, P. I.

Volunteers, Appointments.—The following captains and asst.-surgeons, U. S. A., to be surgeons with the rank of major: George D. De Shon, March 14, 1901; William F. Lippitt, jr., March 21, 1901; James M. Kennedy, March 21, 1901; James S. Wilson, March 27, 1901; Ogden Rafferty, April 6, 1901; Charles F. Mason, April 9, 1901; James D. Glennan, April 9, 1901; Thomas U. Raymond, April 9, 1901; also Captain Edward A. Romig, assti-surgeon 40th Infantry, March 28, 1901, and Frederick A. Washburn, Jr., of Massachusetts, March 28, 1901.

To be asst.-surgeons with the rank of captain: James G. McKay, of Pennsylvania, March 13, 1901; Thomas W. Jackson, of Pennsylvania, March 15, 1901; William Alden, of Massachusetts, March 15, 1901; Willis J. Raynor, of Colorado, March 22, 1901; William B. Summerall, of Georgia, March 21, 1901; Thomas K. Mullins, of Alabama, March 21, 1901; Ernest K. Johnstone, of California, March 19, 1901; Julius A. Escobar, of New York, March 19, 1901; Frederick, A. W. Conn, of Pennsylvania, March 23, 1901; Simon J. Fraser, of California, March 23, 1901; Reuben M. Bonar, of Ohio, March 27, 1901; Wharton B. McLaughlin, of Texas, March 28, 1901; Thomas T. Jackson, of Texas, March 28, 1901; James W. Madara, of Kentucky, April 2, 1901; Milton Vaughan, of Arkansas, April 2, 1901; Nelson Miles Black, of Wisconsin, April 3, 1901; William O. Cutliffe, of New York, April 6, 1901; George B. Lawrason, of Louisiana, April 6, 1901; Albert H. Eber, of Michigan, April 4, 1901; James B. Cutter, of California, April 11, 1901; William H. Block, of Maryland, April 11, 1901; Robert E. Williams, of California, April 11, 1901.

Volunteer Promotions.—Captain Samuel C. de Krafft, asst.-surgeon, 28th Infantry, to be surgeon with the rank of major, March 26, 1901; Lieutenant Albert H. Eber, asst.-surgeon, 30th Infantry, to be asst.-surgeon, with the rank of captain, March 1, 1901; Lieutenant John C. Greenewalt, asst.-surgeon, 33d Infantry, to be asst.-surgeon with the rank of captain, March 30, 1901; Lieutenant H. Brookman Wilkinson, asst.-surgeon, 34th Infantry, to be asst.-surgeon, with the rank of captain, Feb. 28, 1901; Lieutenant George L. Hicks, Jr., asst.-surgeon, 38th Infantry, to be asst.-surgeon, with the rank of captain, Feb. 20, 1901; Lieutenant Harold L. Coffin, asst.-surgeon, 39th Infantry, to be asst.-surgeon, with the rank of captain, March 31, 1901.

Volunteers, Honorably Discharged on Account of the Muster of Their Regiments.—Major Francis A. Winter, surgeon, 37th Infantry, Feb. 20, 1901; Captain Thomas B. Anderson, asst.-surgeon, 37th Infantry, Feb. 20, 1901; Major Ogden Rafferty, surgeon, 37th Infantry, April 1, 1901.

Navy Changes.

Changes in the Medical Corps of the navy, week ended April 27, 1901:

Asst.-Surgeon J. B. Dennis, detached from the Naval Academy and ordered to the *Chesapeake*, May 2.

Asst.-Surgeon C. G. Smith, ordered to the *Vermont*, April 28.

Medical Inspector F. Rogers, ordered to the *Brooklyn*, for duty as fleet surgeon of the Asiatic Station.

Surgeon W. F. Arnold, detached from duty at Olengapo, P. I., and ordered to the *New Orleans*.

Surgeon C. F. Stokes, ordered to the Cavite Naval Station to await the *Solace*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended April 25, 1901:

Surgeon F. W. Mead, department letter of January 11, 1901, granting leave of absence for sixty days, amended so that said leave shall be for one month and twenty-four days.

Surgeon A. H. Glennan, to proceed to Tallahassee, Fla., for special temporary duty.

Surgeon W. P. McIntosh, to proceed to Ducktown, Tenn., for special temporary duty.

Surgeon W. J. Pettus, department letter of January 11, 1901, granting leave of absence for two months, amended so that said leave shall be for one month and twenty-seven days.

P. A. Surgeon C. P. Wertenbaker, to represent the service at meeting of Texas Medical Association, Galveston, Texas.

P. A. Surgeon J. A. Nydegger, to proceed to Cape Charles Ventura, Va., for special temporary duty.

P. A. Surgeon H. S. Mathewson, to proceed to Ponce and Guayanilla, Porto Rico, for special temporary duty.

Asst.-Surgeon W. W. King, to proceed to Guayanilla, Porto Rico, for special temporary duty.

A. A. Surgeon L. P. Gibson, granted leave of absence for seven days.

A. A. Surgeon J. C. Rodman, granted leave of absence for seven days from April 24.

Hospital Steward Mark H. Watters, relieved from duty at Chicago, and directed to proceed to St. Louis, Mo., and report to the medical officer in command for duty and assignment to quarters.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended April 26, 1901:

SMALLPOX—UNITED STATES AND INSULAR.

Delaware: Newcastle, April 1-15, 4 cases.
Florida: Jacksonville, April 13-20, 6 cases.
Illinois: Chicago, April 13-20, 17 cases.
Kentucky: Cynthiana, April 17, 6 cases; Lexington, April 13-20, 4 cases.
Louisiana: New Orleans, April 13-20, 10 cases, 1 death.
Minnesota: Winona, April 13-20, 2 cases.
New Hampshire: Manchester, April 13-20, 7 cases.
New Jersey: Jersey City, April 14-21, 4 cases.
Ohio: Cincinnati, April 12-19, 7 cases; Cleveland, April 13-20, 6 cases.
Pennsylvania: April 13-20, Pittsburg, 1 case; Steelton, 3 cases.
Tennessee: Nashville, April 13-20, 1 case.
West Virginia: Wheeling, April 13-20, 1 case.
Philippines: Manila, March 2-9, 8 cases.
Porto Rico: San Juan, April 6, 13 cases.

SMALLPOX—FOREIGN.

Austria: Prague, March 23-April 6, 8 cases.
Belgium: Antwerp, April 6, 3 cases, 1 death.
China: Hongkong, March 2-9, 6 deaths.
France: Paris, March 31-April 6, 10 deaths.
Gibraltar: April 1-7, 2 cases.
Great Britain: England—Southampton, April 6-13, 3 cases. Scotland—Glasgow, April 6-13, 5 deaths; Leith, March, 31-April 6, 1 case.
India: Bombay, March 19-26, 12 deaths; Calcutta, March 16-23, 144 deaths; Karachi, March 9-16, 12 cases, 8 deaths; Madras, March 16-22, 10 deaths.
Mexico: Progreso, March 31-April 6, 4 cases; Yucatan, Merida, April 11, prevalent.
Netherlands: Rotterdam, March 31-April 6, 1 case.
Russia: Odessa, March 31-April 6, 13 cases, 1 death.
Spain: Corunna, March 31-April 6, 1 death; Vigo, March 1-31, 1 death.

YELLOW FEVER.

Colombia: Panama, April 8-15, 8 cases.
Hayti: Cape Haytien, March 23-30, 1 case, 1 death.
Mexico: Coatzocoalcos, April 1, prevalent.
Salvador: San Salvador, March 31, 4 cases 3 deaths.

CHOLERA.

China: Hongkong, March 2-9, 1 death.
India: Bombay, March 19-26, 4 deaths; Calcutta, March 16-23, 65 cases; Madras, March 16-22, 1 case.
Straits Settlements: Singapore, Feb. 26-March 2, 5 deaths.

PLAGUE—INSULAR.

Philippines: Manila, March 2-9, 8 deaths.

PLAGUE—FOREIGN.

China: Hongkong, March 2-9, 16 deaths.
India: Bombay, March 19-26, 886 deaths; Calcutta, March 16-23, 1,040 deaths: Karachi, March 19-26, 239 cases, 192 deaths.
Straits Settlements: Singapore, Feb. 26-March 9, 3 deaths.